



ON THE RISE
ANNUAL INDUSTRY
SNAPSHOT CHARTS
787 FLEET GROWTH
CENSUS P24

SINGLE MINDED
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REALITY CHECK
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FLIGHT

INTERNATIONAL

From  Flightglobal

11-17 AUGUST 2015

COMBAT AIRCRAFT

HOVER THE LINE

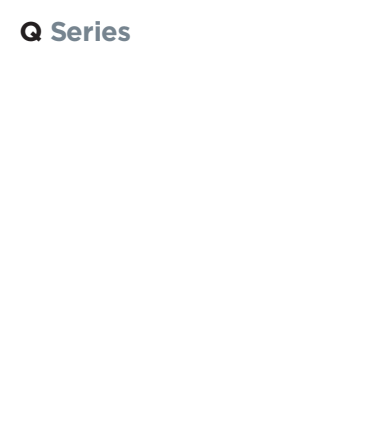
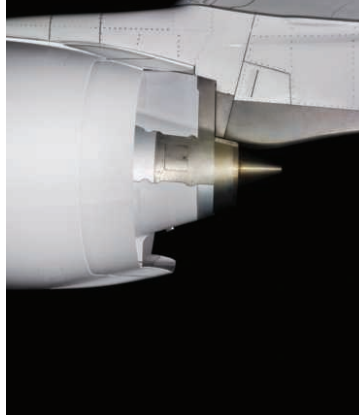
US Marine Corps makes history as it declares
first F-35B squadron ready for action



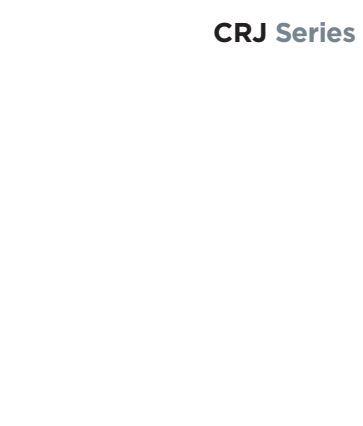
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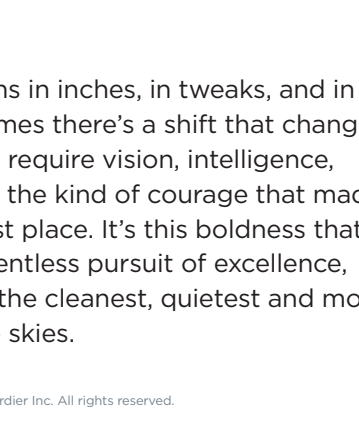
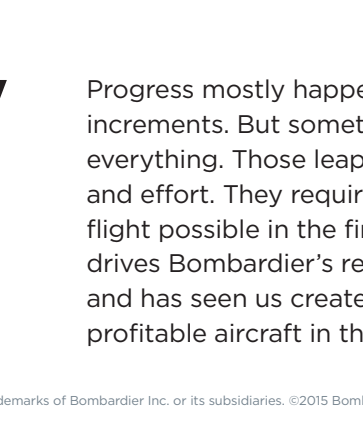
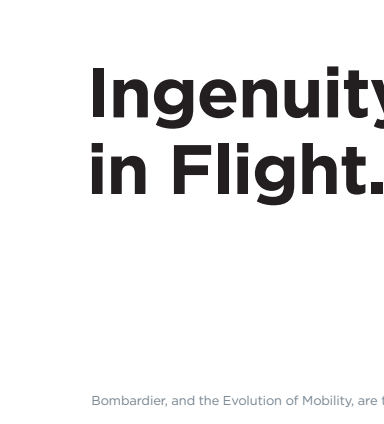
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COVER IMAGE

An initial unit of US Marine Corps aviators flying the short take-off and vertical landing Lockheed Martin F-35B have been declared ready for combat **P9**



BEHIND THE HEADLINES

Flightglobal's Latin American air transport expert **Ghim-Lay Yeo** journeyed to Mexico to interview **Enrique Beltranena** the chief executive of carrier **Volaris (P10)**, in which he outlined the airline's fleet plans, including its intention to take more **Airbus A321s**



NEXT WEEK RUSSIA

On the eve of Moscow's **MAKS** air show, we survey the country's varied aerospace challenges and opportunities

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India formally cancels MMRCA requirement **P10**. British Army Aviation Corps retires its last Lynx AH7s **P18**



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IMAGE OF THE WEEK

Bombardier 415 water bombers operated by France's Sécurité Civile agency fly from their Marseille airport base to tackle a July wildfire near St Jean d'Illac in the southwest of the country. France operates a fleet of 12 of the Canada-built aircraft, which are powered by twin PW210 engines

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Rex Features

THE WEEK IN NUMBERS

4.5%

Flightglobal dashboard

Russia slumped but "resurgent" Ireland, Greece, Portugal and Spain drove H1 European airport traffic growth figures

€27m

Finmeccanica

The value of UK MoD contact with Selex ES – to run a just-in-time spares service for 15 aircraft types at 45 bases

300

Flightglobal dashboard

The number of aircraft Iran needs to buy in the next decade to replace a fleet of some 160 jets averaging 23 years old

QUESTION OF THE WEEK

Last week, we asked:

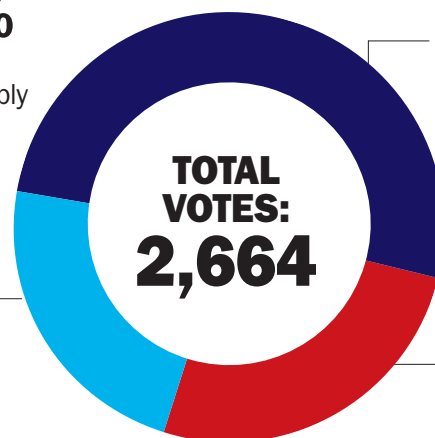
Can Airbus still deliver its first A320neo in 2015? You said:

23%

Yes, comfortably

51%

Touch and go



This week, we ask: **The US Marine Corps' IOC declaration for the F-35B?**

☐ Shows how far the programme has come

☐ Important, but challenges remain ☐ Papering over the cracks

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A promise not broken

The all-purpose F-35 Joint Strike Fighter would be controversial even if it weren't wildly behind schedule and over budget – so one milestone reached on time means more than it seems

Sometimes a purely symbolic achievement actually means something.

The Lockheed Martin F-35 programme has a lot of promises still to keep. Within five years, programme officials must now complete development of all three variants, reduce unit prices by 25% and sort out a current mess of a maintenance system.

Meeting those measures will be challenging enough on its own, but probably impossible given another downturn in public confidence caused by more missed deadlines and budget limits.

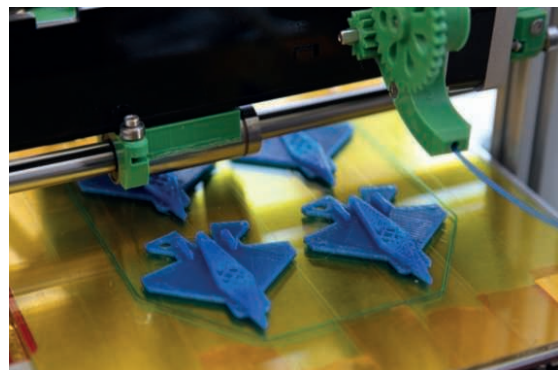
By declaring initial operational capability (IOC) with the first Lockheed Martin F-35B squadron on the last day of July, the US Marine Corps uses a mostly symbolic act to nudge the programme in the right direction.

In purely technical terms, passing the IOC milestone in July 2015, as promised in 2010, is not by itself significant. The USMC established its own criteria for

The F-35 will never satisfy critics who believe its basic design is unworthy of its role

achieving IOC, then came up with a waiver for one criterion that could not be met in time. Compared to the more rigid and consequential status of full operational capability, IOC is more symbol than substance.

But there is an unmistakable sense of momentum growing around the programme. The atmosphere seems completely changed from five years ago. At the beginning of 2010, the F-35 had just emerged from an infamous lost year, as the test fleet remained mostly grounded by technical glitches and the production system was a debacle. The head of the programme was



One way to meet deadlines

sacked and Secretary of Defense Robert Gates acknowledged a new budget overrun and a three-year delay.

When the marines promised five years ago to achieve IOC of the F-35B in 2015, few would – or should – have believed them to keep their word.

But the programme really has changed. The back-to-back appointments of Vice Adm David Venlet and Lt Gen Christopher Bogdan transformed a dysfunctional F-35 joint programme office into a bureaucracy that actually solves problems.

The F-35, of course, will never satisfy a global chorus of critics who believe the fighter's basic design is unworthy of its role regardless of how much time and money supports its development.

But the best argument against the F-35 has always been a decade-long track record of expensively broken cost and schedule commitments. The programme is by no means yet out of trouble, but the F-35B IOC milestone symbolises a recent period of progress and promises – finally – kept. ■

See This Week P9

Still searching

When the excitement over the debris discovery on Reunion dissipates, there will be a realisation that the balance between known and unknown has tipped only fractionally in the investigators' favour.

It will consign the more eccentric theories on MH370 to the junkyard of palpable nonsense, from which they ought never have been taken, at least by anyone who wanted to retain a reputation for credibility.

Confirmation will also force-feed a decent mouthful of crow to some of the dissenters who had voiced scepticism over the conclusions from Inmarsat, which, by putting mathematics over motive, claimed MH370 had headed to a place where it would be harder to locate than if it had been flown to the Moon.

Analysis of the debris might hint at the dynamics of the impact, which might prompt a rethink of assumptions, which might feed back into the flightpath modelling. The emphasis being on the word "might".

But the first tangible part of MH370 to have turned up in 500 days of hunting will probably yield, in isolation, fewer useful clues about the jet's location than the intangible satellite echoes and trigonometric juggling.

Solving the MH370 riddle will demand much more than a reassurance that the inquiry really does know what it already thought it knew. Because even if the wreck is in the Indian Ocean, as the first solid debris suggests, the answers still might not be. ■

See This Week P11



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BRIEFING

LOCKHEED TO DEVELOP UPDATED HELLFIRE MISSILE

MUNITIONS Lockheed Martin has been awarded a \$66 million engineering, manufacturing and development contract to pair its multi-mode seeker with its Hellfire Romeo missile body for improved accuracy against moving ground targets in poor weather conditions. The announcement on the joint air-to-ground missile programme restarts the US Army's bid to replace air-launched Lockheed Hellfire and Raytheon TOW missiles with a single, improved weapon.

ISRAEL'S EL AL STICKS WITH BOEING WIDEBODIES

ORDER El Al has decided to acquire a mix of 15 Boeing 787-8s and -9s to replace its ageing 747-400s and 767-300ERs, preserving the US manufacturer's monopoly of the Israeli flag carrier's fleet. The airline is now negotiating exclusively with Boeing to sign a firm order for "about half" of the 15 aircraft worth \$800 million to \$900 million, the carrier says, with the remainder sourced from lessors. The firm commitment will include an option to purchase up to 13 more aircraft, plus "additional alternative engines". All 15 aircraft will enter the fleet between 2017 and 2020.

NO CASUALTIES IN CITILINK RUNWAY EXCURSION

INCIDENT Investigators are probing a 2 August accident at Padang in Indonesia in which a Citilink Airbus A320 skidded off the runway following a landing in heavy rain. The aircraft (PK-GQG) was performing flight QG970 on the Jakarta-Padang route when the incident happened at about 19:27 local time. Images showed the aircraft, which was only delivered last November, with its emergency slides deployed, resting on a grass area just off the runway. No injuries were reported among the aircraft's 184 occupants.

HAINAN AIRLINES PARENT SNAPS UP SWISSPORT

ACQUISITION China's HNA Group has signed a deal to acquire ground handling giant Swissport Group for Swf2.73 billion (\$2.82 billion). The transaction, still subject to regulatory and anti-trust approvals, is expected to close by the end of the year. HNA, parent of Hainan Airlines, will take a 100% stake in Swissport from PAI Partners SAS, which acquired the ground and cargo handler in 2010. After the acquisition, the Zurich-based firm will remain as a stand-alone business within the HNA Group.

RAF TORNADOS TO CONTINUE IRAQ OPERATIONS

DEPLOYMENT Panavia Tornado GR4 aircraft from the Royal Air Force's 12 (B) Sqn will continue to operate against Islamic State militants in Iraq until March 2017, further delaying the retirement of the ground attack type from UK service. Announced by UK defence secretary Michael Fallon on 4 August, the "spearheading" squadron will continue to "offer the essential precision firepower, intelligence and surveillance needed" for another year, despite originally being listed for disbandment in 2014.

ISRAELI CH-53S RECEIVE LONG-SOUGHT UPGRADES

ENHANCEMENT Israel has completed an upgrade programme covering its air force's fleet of Sikorsky CH-53 heavy-lift rotorcraft. Launched in 2006, the enhancement work is designed to keep the "Yasur" helicopters flying until 2025. Modifications include the addition of new mission systems and avionics, as well protection and treatment of the airframe. Tel Aviv has previously sought to acquire Bell Boeing V-22 tiltrotors as a potential replacement for its CH-53s, but budget restrictions have delayed any contract.



Flight testing of the carbonfibre aircraft is due to begin soon

INNOVATION

Facebook's Aquila is ready to soar

Social media giant Facebook has unveiled the completed prototype of a solar-powered unmanned aircraft that is designed to fly above 60,000ft for more than three months.

A Facebook-produced video released on 30 July shows the 42m- (137ft-) wingspan carbonfibre Aquila fully assembled in a building near Yeovil, UK. Engi-

neers are shown powering on the flying wing's four electric motors, each driving a two-bladed propeller. It hopes to begin flight testing shortly. Facebook is sponsoring the Aquila project as part of a vision to provide Internet connectivity in parts of the world that lack practical access to terrestrial or satellite-based networks. ■

PROGRAMME MAVIS TOH SINGAPORE

Seattle site joins MRJ development

Mitsubishi taps local talent for engineering centre that will support regional jet's forthcoming US testing programme

Mitsubishi Aircraft has opened an engineering centre in Seattle, as it prepares for flight tests of its MRJ regional jet in the USA, scheduled to start in the second quarter of 2016.

At a media briefing in the city on 3 August, the Japanese airframer said the facility will primarily produce flight-test specifications as well as analysis and feedback of flight data.

The centre will work with local company Aerospace Testing Engineering & Certification to "accelerate the MRJ's conformity activities and provide prompt support for flight tests in the US", it adds.

Mitsubishi says it selected Seattle as the location for the 40,000ft² site in order to take advantage of the city's large pool of experienced aircraft engineers.

It will employ 150 staff, 100 of

which will be recruited locally, while the remainder will be seconded from the manufacturer's operations in Japan.

A large proportion of the MRJ's flight-test campaign will be conducted at nearby Grant County International airport at Moses Lake, Washington, where Mitsubishi is building a 65,000ft² hangar.

Mitsubishi will also conduct flight test and engineering operations at three more sites in the USA.

The work covers high-altitude flight evaluations at Gunnison Crested Butte Regional airport in Colorado, special runway tests at Roswell International Air Centre in New Mexico, and extreme environment tests at McKinley Climatic Laboratory in Florida.

The MRJ90 is scheduled to make its maiden sortie in either September or October. ■



India finally kills
off MMRCA
THIS WEEK P9

DEVELOPMENT JAMES DREW WASHINGTON DC

F-35B finally operational but spotlight still on programme

USMC declares capability milestone as Lockheed says big issues have been addressed

The US Marine Corps says its first combat F-35B squadron is “ready for battle,” but after 14 years of development marked by cost increases and delays, it is time for the Joint Strike Fighter (JSF) to prove it is as capable as advertised.

Ten nations, not including Denmark and Canada, are counting on Lockheed Martin to deliver more 3,000 combat aircraft to replace rapidly aging fighter forces.

Lockheed’s fifth-generation combat type, conceived in the mid-1990s, is already five years behind the original target for initial operational capability and with two years and just under 40% of testing remaining, there are plenty of opportunities for new bugs to crawl out of the system.

There have already been several fleet groundings, most recently in June 2014, and dozens of design tweaks, but programme officials say fewer and fewer new problems are now surfacing.

Additionally, the programme claims to have met every target set during the recalibrations of 2010 and 2012. In fact, the service’s IOC announcement on 31 July kept to a target set in 2012.

“The weapons system is now in the warfighters’ hands and can be called upon to do its mission,” F-35 programme executive officer Lt Gen Christopher Bogdan says.

CHALLENGES OVERCOME

“[We] have worked through a number of challenges as we focused on delivering a stealth fighter that could fly faster than the speed of sound, carry its weapons internally, conduct short take-offs and vertical landings, and be deployed from amphibious ships and austere bases. We’ve done it.”

With the marines now past



Sea trials of F-35B were conducted aboard the USS Wasp

IOC, all eyes are now on Hill AFB in Utah where the US Air Force’s 34th fighter squadron is preparing to induct the conventional take-off and landing F-35A.

The base expects to receive its first aircraft in September, and one per month after that until a scheduled IOC declaration in August 2016. The air force says it will reach the target despite a shortfall in trained maintenance staff.

The navy, meanwhile, aims to declare IOC with 10 carrier-based F-35Cs in August 2018. The programme is also looking abroad, with the UK, Israel, Netherlands and Australia all preparing to stand up their first home-based F-35 combat units.

The aircraft is also yet to make its international debut, owing to an engine fire that grounded the fleet just as the USMC was preparing to fly F-35Bs to the Farnborough air show last year. That will instead come later this year when the first Italian aircraft assembled in Cameri, Italy makes its first flight.

Lockheed F-35 programme chief Lorraine Martin said at the Paris air show this year that 50%

of the aircraft being built over the next five years are for international customers.

Japan’s first F-35 is in assembly at Fort Worth, Texas, and will be delivered next August, and the first Israeli F-35I will arrive in country next year too.

POLITICAL KRYPTONITE

Martin says all of the “chunky” development issues have passed with no major problems keeping her up at night.

But Lockheed and the Pentagon must still convince its customers and the wider public that the JSF is worth the wait and the \$400 billion development price tag.

The F-35 team must also persuade Denmark and Canada to stick with the programme, since each is reconsidering commitments to buy 30 and 65 aircraft respectively.

Boeing is circling both countries, offering the F/A-18E/F Super Hornet. Belgium, Finland and Singapore also have fighter requirements, and if the F-35 does not perform as promised, it risks becoming political kryptonite to those nations. ■

THE ROAD TO IOC

- **1997:** Lockheed Martin and Boeing downselected for the Joint Strike Fighter programme
- **2000:** Lockheed X-35 first flight
- **2001:** Lockheed wins JSF contract. Pratt & Whitney receives contract for F135 engine for all F-35 types
- **2004:** F-35B has major redesign to meet performance requirements, imposing additional costs and delays on all variants
- **2004:** Weight and performance problems lead to first changes to budget and schedule
- **2006:** US Air Force AF-1 first flight
- **2007:** Additional cost growth and schedule delays cause second “re-baselining”
- **2008:** US Marine Corps BF-1 first flight
- **2008:** First supersonic F-35 flight
- **2010:** Programme rebaselined again after cost overruns and delays, adding three years and \$4.6 billion to development phase
- **2010:** Navy CF-1 first flight
- **2010:** First F-35B supersonic flight
- **2011:** F-35B begins sea trials aboard the USS Wasp
- **2012:** Joint programme office rejigs schedule for the fourth time
- **2012:** Marine Corps receives first F-35B
- **2012:** F-35 conducts first weapons drop – a 907kg (2,000lb) Joint Direct Attack Munition
- **2012:** First operational JSF base – Marine Corps Air Station Yuma in Arizona – receives initial F-35B
- **2015:** First F-35 assembled abroad, Italy’s AF-1, rolls off assembly line in Cameri, Italy
- **2015:** Marine Fighter Attack Squadron 121 declared combat-ready in Block 2B configuration

PROGRAMME

STEPHEN TRIMBLE WASHINGTON DC

Textron to unveil turboprop single at next Oshkosh

Textron Aviation has announced a plan to unveil a new single-engined turboprop at the Experimental Aircraft Association's AirVenture fly-in next year in Oshkosh, Wisconsin.

The plan means that the owner of Cessna, Beechcraft and Hawker will seek to enter a market segment long-dominated by Pilatus, Piper and Daher – a segment also targeted by other new projects, including One Aviation's Kestrel and CAIGA's Primus 150.

"This is an entirely new, clean-sheet design – not a derivative of any existing product"

TEXTRON AVIATION

"We intend to outperform the competition with the introduction of this product – from cabin size and acquisition cost, to performance," Textron Aviation says.

The single-engined turboprop segment has long been a focus of both Cessna's and the former Hawker Beechcraft's management teams. Several years ago there was speculation that Cessna was testing a prototype turboprop derived from the airframe of the Mustang business jet, and in 2012, former Hawker Beechcraft chief executive Bill Boisture unveiled a concept image showing a turboprop derivative of the Premier 1 business jet, linked to the company's PD434 aircraft concept.

But the new development project is based on neither of those previous concepts, Textron says. "This is an entirely new, clean-sheet design/aircraft – not a derivative or variant of any existing product."

Textron says the aircraft will have a range of more than 1,500nm (2,280nm) and speeds above 280kt (520km/h) with best-in-class operating costs. ■

CONTEST ATUL CHANDRA BENGALURU

India finally kills off MMRCA

New Delhi withdraws requirement for 126 fighters, reducing deal to 36 French-built Rafales

India has officially ended its Medium Multi Role Combat Aircraft (MMRCA) programme with the formal withdrawal of a request for proposals covering the acquisition of 126 new fighters for the nation's air force.

Defence minister Manohar Parrikar told the country's parliament it was no longer proceeding with the requirement – nominally won by the Dassault Rafale – which would have seen a large number of aircraft produced in-country.

The cancellation of India's 2007 tender has been long expected, with April seeing Prime Minister Narendra Modi announce, during a visit to France, that India would only acquire 36 of the Rafales shortlisted in 2012 for the MMRCA programme.

These would be acquired in fly-away condition "as soon as possible", Modi said, keeping in view the "critical operational necessity" of the Indian air force.

A negotiating team is now working towards the finalisation of a draft agreement, though no

timeline have been given as to when the contract for 36 fighters will be concluded. There remains plenty of conjecture as to whether more French-built Rafales will be acquired, or whether some production would be transferred to India – as was the intention under MMRCA – at a later date.

The decision to go for smaller number of Rafales means that air force plans to recapitalise its fighter fleet are in disarray. The service will be down to 32 combat squadrons by the end of the year, 10 fewer than its sanctioned strength and 13 fewer than the 45 it says it needs.

In further bad news for the service, the Indian government has indicated that the Hindustan Aeronautics Tejas MkII fighter is only likely to achieve its maiden flight in 2019, and become operational in 2022. Parrikar that says when the MkII variant was sanctioned in 2009, the estimated development cost was Rs24 billion (\$389 million), with a project completion date in 2018.



A large number of aircraft were to have been built domestically

Earlier this year, India's Comptroller and Auditor General issued a damning report, condemned the MkI on a range of parameters, from pilot protection to internal fuel capacity.

The MkII features more powerful engines, an active electronically scanned array radar, and an improved electronic warfare suite. ■
Additional reporting by Greg Waldron in Singapore

FLEET GHIM-LAY YEO MEXICO CITY

Volaris seeks to slot in further A321s

Mexican low-cost carrier Volaris is in talks with lessors to take more Airbus A321s, as the airline believes that the higher-capacity variant of the narrowbody can help it better utilise slots at capacity-constrained Mexico City International airport.

The airline added its first two A321s earlier this year, leased in from Air Lease Corporation. An updated fleet plan shows it expects to operate four A321s in 2016, growing to 10 in 2017.

However, chief executive Enrique Beltranena confirms that it is talking to the leasing commu-

nity about acquiring up to four additional A321s in 2018 and "at least four and six more between 2018 and 2020". These will allow it to address slot constraints at the capital city's airport in the most optimal manner, he says.

Volaris had earlier signed an agreement to lease eight A321neos from ILFC, now owned by AerCap, with deliveries scheduled for 2017 and 2018.

"It's also clearly driven by the cost decision," says Beltranena, adding that the A321s perform well in the hot and high conditions found at many of the airports that the airline serves.

Volaris also holds an order for 30 A320neos, and expects its first to arrive from Airbus in May 2016, says Beltranena. ■



Higher capacity narrowbodies will add to its existing A320 fleet



Flap setting errors
led to Kudat crash
AIR TRANSPORT P12

ANALYSIS DAVID KAMINSKI-MORROW LONDON

MH370 debris 'unlikely to aid search'

Investigators probably unable to refine search area as unpredictable factors make modelling of drift extremely difficult

Despite the confirmation from the Malaysian authorities that the flight-control surface discovered on the island of Reunion is part of missing Malaysia Airlines flight MH370 – and it is worth noting that French investigators are yet to reveal detail of their analysis – it is highly unlikely to aid the search for the Boeing 777-200ER.

The chaotic complexity of turbulent ocean currents and wind patterns create too much uncertainty – particularly over an extended period – to enable accurate reverse-modelling of debris drift.

While several entities have contributed to drift modelling for the MH370 investigation, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) says that refining the search zone for the aircraft based on the Reunion debris find would be “impossible”.

**Chaotic complexities
create too much
uncertainty to enable
accurate reverse
modelling**

The Australian Transport Safety Bureau has illustrated the difficulties associated with such modelling, pointing out that an initial analysis of debris drift had predicted that debris could wash up on the western coast of the Indonesian island of Sumatra as early as July last year, four months after the aircraft's disappearance.

REVISED AREA

But this possibility was effectively discounted during further modelling, after the search area for MH370 had been revised the following October. The Australian Transport Safety Bureau says that the difference in predictions from the models – which had been conducted by different organisations – was attributed to a flaw in the earlier model traced to erroneous application of wind data.

“While this error in that model had no impact on the way the surface search was conducted, it was important in order to understand over the course of time where debris might wash up,” says the ATSB.

It says this helped the investiga-



Analysis of the flaperon could give clues regarding the impact

tion in its analysis of possible debris sightings off the western Australian coast.

The drift analysis for MH370 has been complicated further by the delay in establishing the probable impact location for the 777.

French investigation authority BEA noted that the Atlantic hunt for floating debris from Air France flight AF447 had been frustrated by the absence of sea-surface current data at an early stage.

Lack of reliable information, it stated, had “affected the accuracy of the reverse-drift calculation”

and added to the inherent uncertainties of the simulations.

“This work demonstrated that it is important to quickly have access to data on sea-surface currents measured in-situ,” it added, and formally recommended that search aircraft be fitted with buoys which could be immediately deployed to measure drift.

DEBRIS DRIFT

The most recent drift models for MH370 have refined the CSIRO calculations and accounted for the possible effects of sea waves as well as wind and ocean current.

Simulations covering the entire period since the 8 March 2014 disappearance have shown the overall debris drift would have probably been in directions north and then west of the likely crash site.

Expansion of modelling to the western Indian Ocean supports the possibility of wreckage being carried to Reunion and Madagascar as well as southeastern Africa.

CSIRO says that the discovery of the component on Reunion, considered in the context of a reasonable leeward drift, “does not cast doubt” on the search zone defined, even if it cannot be further refined.

Analysis of the debris – a flaperon – might provide insight into the impact. Such techniques were applied to debris from AF447. Investigators are also likely to examine biological evidence derived from any marine life on the structure. ■

INVESTIGATION

Carrier hails discovery as ‘breakthrough’ to solving mystery

Malaysia Airlines describes the apparent retrieval of the first debris from its missing flight MH370 as a “breakthrough” in the investigation.

The Malaysian prime minister, Najib Razak has disclosed the flight-control structure was part of the Boeing 777.

France's justice ministry says further analysis, to begin on 6 August, should confirm “strong suspicions” regarding the origin of the component discovered on Reunion on 29 July.

Razak says that the inquiry now has “physical evidence” that the aircraft crashed in the southern Indian Ocean, where a multinational search has focused its resources.

He says that the government is “committed to do everything within



Serial numbers are helping investigators confirm the debris' origin

[its] means” to find out the reasons behind the loss.

Malaysia Airlines says: “This is a major breakthrough for us in resolving the disappearance of MH370. We expect and hope that there would be more objects to be found which would

be able to help resolve this mystery.”

The aircraft had vanished en route to Beijing on 8 March last year and, until the debris was picked up on Reunion at the end of July, no trace of the twinjet or its 239 occupants had been located. ■

INVESTIGATION AARON CHONG SINGAPORE

Flap setting errors led to Kudat crash

Malaysia's AAIB recommends updates to crew training and operations in the wake of fatal MASWings DHC-6-300 accident

Malaysian investigators have recommended that regional carrier MASWings implement changes to crew training and operations covering the de Havilland Canada DHC-6-300 Twin Otter following a fatal 2013 crash.

The country's Air Accident Investigation Bureau (AAIB) determined that the crew had followed improper landing procedures during the incident at Kudat, which resulted in the deaths of two of the aircraft's 16 occupants. Investigators also found discrepancies between the airline's operations manual for the turboprop and that of the aircraft manufacturer.

The Twin Otter (9M-MDM) was operating flight MH3002 from Kota Kinabalu to Kudat on 10 October 2013 when it came down in a residential area around 165m (540ft) to the right of the runway centreline at 14:50 local time. It was attempting to make a second approach to the airport when the incident occurred.

PROCEDURES

During its first attempt, aiming for the 730m-long runway 04, the Kudat tower advised the crew of



The pilot's actions deviated from the airline's standard procedures

tail winds gusting between 15-25kt. Nonetheless, the aircraft continued its approach and levelled off at 500ft. However, it was unstable during the approach – conducted with a flap setting of 10° in violation of the company's own operating procedures – and the crew elected to perform a go-around and land on the opposing runway 22.

Flaps were initially set at 20° for the second landing attempt, and at 200ft the captain called for them to be fully lowered.

"The flap setting for the second approach for runway 22 was at full flap (37°)," says the

AAIB report. "As the wind was gusting, a flap setting to full-down should be avoided for the landing as stated in company's DHC-6-310 [standard operating procedures].

"With the full-flap configuration, the aircraft had difficulty to settle down on the runway, thus

"The aircraft had difficulty settling down on the runway and travelled beyond the touchdown zone"

MALAYSIAN AAIB

dragging the aircraft [towards] the tower... way beyond the normal touchdown zone."

Still 20ft in the air and without making runway contact, the aircraft was hit by a gust of wind, causing it to yaw sharply to the right. The captain then applied maximum power but failed to change the flap setting. The aircraft was unable to climb and subsequently crashed.

LIMITATIONS

Because the aircraft was not equipped with a flight data recorder, investigators mainly relied on testimony from the captain and air traffic controllers. The first officer was one of the two fatalities.

The AAIB recommends that all future flights into Kudat should be avoided when encountering adverse weather and gusty winds. Twin Otter crews should also be made more aware of the aircraft's operating limitations, it says. It also recommends better training for abnormal wind conditions.

The 1983-built Twin Otter, powered by Pratt & Whitney Canada PT6A-27 engines, was written off in the accident. ■

PROGRAMME TOM ZAITZEV MOSCOW

Ukraine conflict hits Antonov An-140 supply chain

Aviakor has suspended its Antonov An-140 manufacturing programme as a result of supply-chain disruption.

The Russian airframer has co-operation agreements with 34 major An-140 component suppliers in Ukraine, from which it receives crucial systems such as landing gear for the regional twin-turboprop.

Those supplies, however, have been "severely disorganised" by the conflict in eastern Ukraine, says Aviakor director general Anatoly Gusev. "Substituting them with alternative domestic equipment instantly is impossible," he says, pointing out that demand for An-

140s is not sufficient to justify the cost.

Over the past 10 years, Samara-based Aviakor has delivered seven of the type's military variants to

Russia's defence ministry and four passenger aircraft to Yakutia Airlines.

However, earlier this year, the carrier grounded three of its



Aviakor has supplied four of the turboprops to Yakutia Airlines

An-140s because of a lack of spare parts.

Aviakor has also cut its payroll 10% and created around 500 temporary jobs for the remaining personnel, after being allocated Rb23 million (\$366,000) in emergency funding from federal and regional budgets.

By the end of this year, the airframer plans to complete several An-140s ordered by Russia's defence ministry, using components and parts from the remaining stock.

Gusev says it will also continue providing technical support for transports already in service and seek a new workload to utilise production capacity. ■



'New generation'
L-410 starts
certification trials
AIR TRANSPORT P14



Etihad says its services help stimulate the US economy

INQUIRY EDWARD RUSSELL WASHINGTON DC

Strong call for action as US Gulf subsidy docket closes

Nearly 2,000 respondents urge engagement with Qatar and UAE governments on allegations

The US government has taken the final comments regarding subsidy complaints against the three major Gulf airlines, with the big three US mainline carriers claiming that the majority of respondents are in favour of some form of action.

Nearly 2,000 of the roughly 3,000 submissions filed with the Departments of Commerce, State, and Transportation were in favour of the USA engaging with the governments of Qatar and the United Arab Emirates to investigate the allegations of more than \$42 billion in subsidies given to Emirates Airline, Etihad Airways and Qatar Airways, says umbrella body the Partnership for Open and Fair Skies.

"We are overwhelmed by the strong chorus of voices calling on the Obama administration to address the more than \$42 billion in unprecedented subsidies that are keeping the Gulf airlines afloat and harming American aviation jobs," says Jill Zuckman, chief spokesperson for the partnership, which represents American Airlines, Delta Air Lines, United Airlines and their labour unions.

The docket closed at midnight on 3 August, though commenters can file additional information on their existing statements or respond to other comments until the end of 24 August.

Emirates, Etihad and Qatar have all rejected the subsidy allegations and claim their air service

stimulate the US economy by connecting it to their global hubs in the Middle East.

Atlas Air, FedEx, Hawaiian Airlines and JetBlue Airways have created their own organisation – US Airlines for Open Skies – supporting the status quo and the Gulf carriers.

They claim that limiting open skies with the Gulf states would do "extensive harm to US consumers, US competitiveness, the US economy and US national security".

FedEx operates a freight hub in Dubai, while Hawaiian uses open skies rules to serve multiple destinations in Asia. JetBlue, meanwhile, partners with Emirates and Etihad to feed its domestic flights. ■

PRODUCTION DAVID KAMINSKI-MORROW LONDON

Remaining A330 values under pressure

Airbus admits that its A330 is coming under pricing pressure ahead of the transition to the re-engined A330neo.

Speaking during a first-half results briefing, group chief financial officer Harald Wilhelm said it expected pricing to "be a bit lower" on the remaining backlog of A330s.

"However, we will ensure that we retain a margin which is reasonable and healthy," he says, adding that some "could be supported by [foreign exchange]".

Airbus is cutting the monthly production rate for the A330 to six aircraft, a figure which is slightly lower than it had as-

sumed at the end of last year.

Wilhelm says that the airframer believes it will be able to balance this difference by "squeezing out" a few more A320s.

Airbus also says its recent orders from Saudi Arabia and China will ensure it can avoid cutting the A330 rate further. ■

ORDER OLIVER CLARK LONDON

IAG firms deal for new batch of widebodies

IAG has firmed options on five Airbus A330-200s and eight A350-900s for Spanish flag carrier Iberia.

The airline group says the A330-200s will be used for additional long-haul growth, while the A350-900s are for replacement. "IAG's additional order for A350s and A330s is very significant for us and highlights the appeal of our leading widebody family," says John Leahy, Airbus's chief salesman.

Flightglobal's Fleets Analyzer shows that Iberia already has eight A350-900s on order, for delivery from 2018, and eight Airbus A330-200s set to begin arriving at the end of this year.

IAG has also firmed options on 20 additional A320neos, which it says are replacement aircraft, but it has not specified which of its carriers they will go to. The group is parent to British Airways and Vueling as well as Iberia.

Meanwhile, British Airways is evaluating whether to switch some of its Boeing 787 orders between variants.

"It is likely that we will change some of our 787-9s to 787-8s," says Willie Walsh, chief executive of IAG. He says a "couple of reasons" prompted the rethink.

He says the group sees better opportunities with the -8s given their seating configuration and current "market trends".

Flightglobal's Ascend Fleets database shows that BA currently has eight 787-8s in its fleet and has orders for 22 787-9s and 12 787-10s, with options for a further 10 Dreamliners of either the -8 or -9 variant. ■



Iberia is taking more A330s



INCIDENT DAVID KAMINSKI-MORROW LONDON

Investigators give Dash 8 pilot credit for action at Nuuk

Air Greenland captain's manoeuvre after technical failure of engine during roll-out reduced risk of injury, says safety probe

Investigators have credited an Air Greenland pilot for executing a ground loop during a landing incident which prevented the aircraft from completely exiting the runway.

The de Havilland Canada Dash 8-200 (OY-GRK) had been veering towards the left side of the runway after a technical failure affecting the right-hand Pratt & Whitney Canada PW123 engine during the roll-out at Nuuk.

Danish investigation authority HCL says the pilot deliberately selected reverse-thrust on the left engine, making the aircraft skid and come to rest in the runway safety zone, 45m off the centre-line. "The decision on making a ground loop in the safety zone reduced the risk of aircraft damage and injuries to persons," says the inquiry into the 29 December 2014 event.

HCL has confirmed preliminary suspicions that a micro-switch failure in a protection system led the right-hand propeller to feather momentarily as the aircraft touched down, causing the

Dash 8 to deviate from the runway heading.

The inquiry says that such momentary activation of the feather signal had been picked up by the quick-access recorder during four out of five previous flights, but that Air Greenland's flight-data monitoring system was not set up to display such warnings.

While HCL noted the crew's rapid actions after the landing, it points out that the circling area-navigation approach to Nuuk's runway 23 was untidy.

The aircraft was 600ft below the specified minimum altitude at the initial approach fix and travelling too fast. It was still flying at 177kt (327km/h) – 47kt above the 130kt speed restriction – as it reached the intermediate fix.

There was no call-out at 1,000ft to confirm the approach was stabilised, says HCL, adding that the turboprop was "just within" the stabilised approach parameters as it passed 300ft. But the inquiry believes that these findings did not affect events during the landing roll. ■



An initial test sortie was conducted on 29 July from Kunovice

DEVELOPMENT TOM ZAITSEV MOSCOW

'New generation' L-410 starts certification trials

Czech airframer Aircraft Industries has started certification trials of its modernised L-410 NG 19-seat commuter turboprop.

The aircraft – which features enhanced GE Aviation H85 engines, new avionics and a more spacious fuselage – is being promoted by the manufacturer as a new generation of the type, rather than merely an upgraded variant.

Following a mid-month roll-out from the airframer's Kunovice factory, the flight-test article conducted a maiden sortie on 29 July. This evaluated its basic handling and performance, says Aircraft Industries, as well as confirming system functionality.

It intends to complete certification and begin L-410 NG serial production in 2017. A mock-up was recently displayed at a trade and industry show in Russia's Ekaterinburg, hometown of UGMK, which owns the Czech manufacturer.

Ekaterinburg's regional administration has previously showed an interest in acquiring a batch of L-410 NGs and deploying them on subsidised routes within the region.

UGMK special projects chief Timur Azerny says the company has already supplied 45 turboprops to Russian customers since 2008, when it took control of Aircraft Industries. ■



DELIVERY

New jet puts Air Canada on cloud -9

Air Canada has become the ninth carrier worldwide to take delivery of the Boeing 787-9, with the airline receiving the first of 29 examples of the stretched Dreamliner late last month.

The GE Aviation GEnx-1B-powered twinjet (C-FNOE) arrived at the airline's Toronto hub on 31 July and will begin revenue flights later this month linking the city with Vancouver in the west of the country. It will then make its international debut for Air Canada on services from Toronto to Milan and Munich, before eventually being deployed on routes to New Delhi and Dubai from early November.

Air Canada's 787-9s are equipped with 298 seats in a three-class layout, an increase of around 20% over the eight 251-seat -8 variants it already operates.

Its remaining -9s will be delivered by 2019.



Dutch tanker assists
Poland as European
ties strengthen
DEFENCE P16

AIRLINERS STEPHEN TRIMBLE WASHINGTON DC

Reality alters Boeing's assumptions

Airframer updates listed seat-counts and performance specifications to take into account "obsolete" underlying data

Frequent visitors to Boeing's website may have had a surprise at the start of August: the listed seat-counts and range specifications for nearly all of the company's models have changed, some dramatically.

But Boeing officials say there is no need for alarm: the underlying performance of the aircraft is no different – Boeing has simply updated a set of generic weight and configuration assumptions used to calculate aircraft range.

"There's no performance change to the actual airplane. Our airplane is doing just fine, and the customers won't see any change to their rules. This is just changing our philosophy to more closely represent what our customers are using," says Jim Haas, a Boeing marketing director.

NUMBER CRUNCHING

As the first such update since the early 1990s, some of the changes appear significant. For example the predicted range for six models – 737 Max 7, 737 Max 200, 787-9, 787-10, 777-9X and 777-8X – each decline by more than 500nm (926km). Two other types, the 787-8 and the 777-300ER, lose almost the same amount of range.

By changing the calculations now, Boeing finally acknowledges what most airline customers, in-



Lufthansa's performance figures for the 747-8I are at odds with the data published by Boeing

dustry analysts and rivals already knew. The standard set of assumptions Boeing has used to calculate performance for generic marketing purposes has been "obsolete" for a long time, Haas says.

"The reason we kept it so long is we look at the actual seat counts [the marketing brochures]. They were pretty representative of the actual seats airlines were putting in airplanes," Haas says.

Although the numbers may have been similar, the weight of the passengers, their bags and the seats themselves have been growing substantially. At the same time, the first-class cabin used in earlier assumptions has all but disappeared, replaced by more elaborate business-class cabins

with lie-flat seats and premium-economy cabins. This means there is a growing mismatch between the numbers that Boeing presents in marketing presentations and the numbers that they show to airlines in closed-door sales discussions.

GROUND RULES

"We really wanted a set of generic ground rules that better reflected airplanes used in operation," says Randy Tinseth, vice-president of marketing.

Most airlines provide fleet performance data on their websites, but the listed figures usually parrot Boeing's marketing information. An exception to that rule is Lufthansa, which lists range

figures for each aircraft in its fleet using the airline's own ground rules. Lufthansa's passenger-carrying fleet is mostly filled with Airbus models, but it does include a revealing snapshot of the 747-8 Intercontinental.

Boeing previously listed the latest version of the venerable 747 series with a 467-passenger cabin and a range of 7,790nm. But its updated internal reckoning reduces the cabin to 410 passengers and a range of 7,730nm.

That moves Boeing's assumptions closer to the specifications listed on Lufthansa's website, but there is still a wide gap between them: the German carrier lists the 747-8I with a 364-seat cabin and a range of 7,073nm. ■



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DELIVERIES

JAMES DREW WASHINGTON DC

Egypt welcomes F-16Cs following US embargo lift

Egypt has received eight Lockheed Martin F-16C Block 52 from the US following an improvement in diplomatic relations between the two nations.

The US Embassy in Cairo says that the eight jets had arrived at Cairo West air base by 31 July. An additional four examples will follow some time between September and November.

"The eight fighter jets [have been] flown in directly from the US, and will be immediately integrated into the Egyptian air force, joining its existing fleet of US-made F-16 aircraft," says the embassy. They transited via Lajes air base in Portugal en route to Cairo on 28 and 29 July.

The announcement comes five months after US President Barack Obama lifted a hold on

The 12 F-16s will join four F-16Cs and four F-16Ds which are already delivered from an order placed in March 2010

fighter deliveries that had been in place since Egypt's military coup in October 2013, which overthrew the incumbent Muslim Brotherhood administration.

The new batch of aircraft will join four F-16Cs and four F-16Ds that have already been delivered from an order placed in March 2010. Egypt's eclectic combat fighter force also includes some 200 older F-16s, Dassault Mirage 2000s and Mirage Vs, Mikoyan MiG-21s and Chengdu J-7 interceptors, Flightglobal's Fleets Analyzer database shows.

The F-16 delivery coincides with Egypt's introduction of the Dassault Rafale; the first three of a 24-aircraft order were delivered last month. ■

CO-OPERATION ANNO GRAVEMAKER POWIDZ

Dutch tanker assists Poland as European ties strengthen

KDC-10 practises refuelling operations with Polish air force F-16s ahead of NATO exercise

As part of the increasing Europe-wide co-operation in air-to-air refuelling, the Royal Netherlands Air Force has sent one of its two McDonnell Douglas KDC-10 tankers to Powidz air base in Poland to assist with training Polish air force Lockheed Martin F-16C/D crews.

The F-16s will participate in the Trident Juncture NATO exercise from 21 October to 6 November, and Warsaw's pilots require additional practice at night-time refuelling operations ahead of the event.

The co-operation benefits both air forces: by operating from a home airfield, the cost for the Polish air force is reduced, while its Dutch counterpart gains valuable training time.

Face-to-face feedback was also beneficial. "The debriefing with the videos from the boom operator provided me with the boomer's perspective," one Polish pilot says. "This gives me a better understanding of the importance of my position as receiver."



Anno Gravemaker

Polish F-16 pilots received feedback from the boom operators

Poland and the Netherlands are the two primary nations participating in a pan-European programme to acquire Airbus Defence & Space A330 Multi-Role Tanker Transports (MRTT).

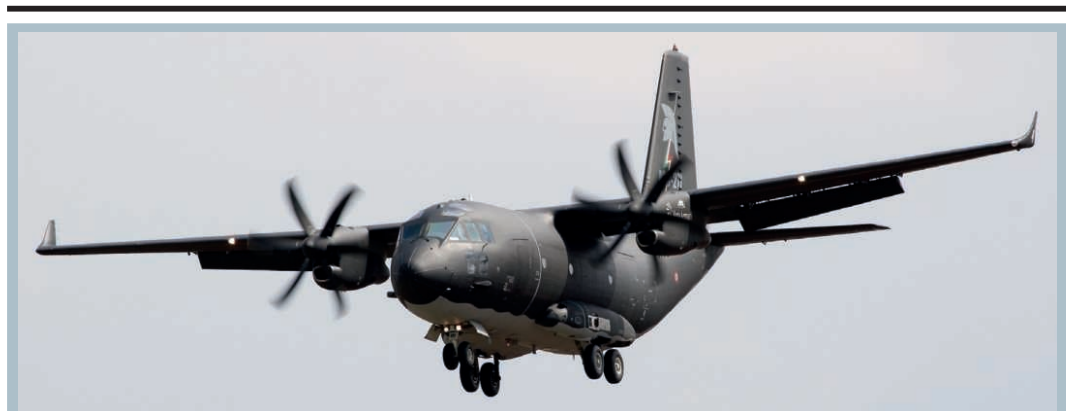
Together with Norway, they have issued a request for proposals to purchase four to five examples to be used as a shared resource.

With the assistance of the European Defence Agency, the aim is to have a signed contract in 2016,

to achieve initial operating capability in 2020, then to reach full operating capability one year later.

The Dutch air force can then decommission its KDC-10s around 2020. The two former civilian Martinair airframes are 39 and 37 years old respectively, Flightglobal's Fleets Analyzer database shows.

The main operating base of the fleet will be Eindhoven in the Netherlands, with forward operating bases in Poland and Norway. ■



Best Shot Aviation/Alenia Aermacchi

UPGRADE

Flight trials validate C-27J winglet performance gain

Alenia Aermacchi is to offer its C-27J medium transport with a winglet modification, after performing flight tests with the enhancement. Benefits of the winglet integration include "improved hot-and-high runway performance, increased payload, range and endurance, and a reduction in operating costs", the Italian manufacturer says. As a result of successful testing conducted since mid-June, the company says it has decided to incorporate the change with the battlefield airlifter, plus its in-development gunship and surveillance variants. Part of the winglet structure has been produced using an additive layer manufacturing – or 3D printing – technique, Alenia Aermacchi says.



RAF picks Selex for
Puma upgrades
DEFENCE P18

REQUIREMENT IGOR SALINGER BELGRADE

Serbia seeks new rotorcraft

Belgrade to acquire four transport helicopters, expected to be pairs of AS532s and Mi-171s

Serbia's air force is looking to acquire four new rotorcraft to complement its current Mil Mi-8 transport helicopters, two of which it hopes to receive by year-end.

The new arrivals look likely to be a pair of Airbus Helicopters AS532 Cougars – a deal for which is close to being completed according to government sources – and two Russian-built Mi-171s.

"The country is finally ready to enter the acquisition process for two Russian and two French [helicopters, some] to be delivered immediately, and the rest in one year," says Serbian Prime Minister Aleksandar Vucic.

"The priority is the helicopters, and the request is to purchase two by year end and two more in 2016," Bratislav Gasic, the Serbian defence minister, told the Serbian Tanjug state news agency.



Six of the nation's current fleet of Mi-8s are almost 50 years old

Serbia currently operates seven Mi-8s, six of which are almost 50 years old, Flightglobal's Fleets Analyzer database shows.

Belgrade is also in talks with Airbus Defence & Space regarding the potential acquisition of a transport aircraft to replace its two Antonov An-26s.

The country also hopes to engage the European aerospace giant to upgrade its Soko Super Galeb G-4MD trainers, as well as in the creation of a regional maintenance and overhaul facility for rotorcraft in collaboration with its Moma Stanojlovic facility near Belgrade. ■

EVALUATION STEPHEN TRIMBLE WASHINGTON DC

K-Max to inform cargo UAS concept

In a key step toward developing a new mission for unmanned air systems, two optionally-piloted Lockheed Martin/Kaman K-Max helicopters will move to a US Marine Corps base in Arizona by the end of September.

USMC test squadron VMX-22 will use the newly-designated CQ-24As to "develop concept of operations and tactics, techniques and procedures, and to help inform any programme of record", Naval Air Systems Command says.

The USMC is already familiar with the K-Max, having logged more than 1,800 flight hours with two aircraft in an extended, three-year demonstration tour in Afghanistan.

But the service plans to soon launch an acquisition programme for a fleet of cargo UAS (CRUAS). If a schedule released late last year remains on course, the USMC would finalise its requirements within four years,

and launch production within seven.

There are two new technology programmes also in development to support CRUAS. The Defense Advanced Research Projects Agency is funding the aerial reconfigurable embedded system, with a Lockheed/Piasecki team developing a dual-ducted fan-based unmanned platform, while the Office of Naval Research is sponsoring the autonomous aerial cargo/utility system, a technology being developed by Aurora Flight Sciences to allow an unmanned rotorcraft to self-select a landing zone.

Although these technologies are soon moving into flight demonstration phase, the marines' aggressive timeline to reach production in 2022 could favour existing systems.

Unless the USMC's requirements change dramatically, Lockheed continues to support the K-Max as its preferred solution, the company says. ■



Trials of the unmanned system were conducted in Afghanistan

ENHANCEMENT

JAMES DREW WASHINGTON DC

Defensive aids to boost USAF's unmanned fleet

A panel of military scientists is briefing senior US Air Force leaders on ways to make the defenceless General Atomics Aeronautical Systems MQ-9 Reaper and Northrop Grumman RQ-4 Global Hawk unmanned air vehicles more useful in a war against an enemy with the ability to shoot down aircraft.

The UAVs were purchased in the 2000s when the conflicts in Afghanistan and Iraq were at their peak. However, as they were operating in uncontested airspace, they were not equipped with the defensive aids and self-protection systems typical of manned fighter aircraft.

Officials are now concerned that they will be shot down in any area where the USA and its allies do not dominate the skies.

The service's Scientific Advisory Board (SAB) now says that adding available sensors, weapons, threat detection and countermeasures systems to the MQ-9 and RQ-4 for better defence could see the aircraft deployed on riskier operations.

"The SAB found that both the MQ-9 and RQ-4 could be modified in specific ways to provide utility in contested environments at various levels of contestation," says Werner Dahm, SAB chair and air force chief scientist from 2008 to 2010, adding that there is payload capacity on the two aircraft for additional sensors.

Speaking at a media event on 3 August, he said the General Atomics MQ-1 Predator the USAF is phasing out would not be of much use in a high-end conflict except to draw enemy fire, but the MQ-9 and RQ-4 could provide greater support with certain upgrades such as radar warning receivers and new weapons.

Dahm will meet Air Force Secretary Deborah Lee James on 7 August to discuss next year's research, which could include military space architectures and electronic warfare. ■

RETIREMENT JIM WINCHESTER MIDDLE WALLOP

Lynx AH7 flypast marks end of British Army service

The British Army Air Corps (AAC) retired its six remaining AgustaWestland Lynx AH7 battlefield reconnaissance helicopters on 31 July, making way for the service's Wildcat replacement.

Prior to retirement the Lynx AH7 was used for operational conversion to type by 671 Sqn, during which some three months and 200h of flight training would qualify students to fly the Lynx AH9, Boeing Apache AH-64 or Wildcat AH1 in a tactical environment.

The remaining six AH7s made a final flypast over army headquarters at Andover,



Wildcat commonality means the AH7s can be used for spare parts

Hampshire, then returned to their base at nearby Middle Wallop in "7" formation – representing the force's parent

body, 7 Regiment – during the flypast ceremony.

These aircraft, plus two others present on static display, are

destined to become donors for the Wildcat, which shares many components, including its rotorhead, with the Lynx.

It is possible that they will find homes as display airframes as there are believed to be enough parts available to support the Wildcat programme.

All but 12 of the 119 AH7s delivered were converted from Lynx AH1 airframes between 1985 and 1988, the rest being new builds.

The Lynx AH9A variant will remain in AAC service until 2019 when it is replaced by the Wildcat in 659, 661, 669 and 672 Sqs. ■

MODIFICATION BETH STEVENSON LONDON

RAF picks Selex for Puma upgrades

Transport helicopter fleet to get new radar warning receivers, with the potential for a similar Chinook update on the cards

Selex ES has been selected to provide a radar warning receiver (RWR) upgrade to the Royal Air Force's fleet Airbus Helicopters Puma HC2 rotorcraft, replacing the Sky Guardian 200 system that is currently installed on the type.

The £19 million (\$30 million) contract will see the SG200-D – a UK Ministry of Defence-specific variant of the company's Seer RWR – provided for the 24-strong Puma fleet.

Selex declines to detail the distinguishing elements of the UK-specific RWR, its delivery schedule or the number of systems ordered.

However, Kyle Alexander, campaign manager for electronic warfare at the company, says that

in addition to full equipment sets, spares and training, the contract includes the delivery of so-called "A-kits". These consist of antenna and cockpit control equipment that are integrated on the whole fleet, while the rest of the system is then rolled on and off the aircraft to speed up the time from training to operation.

The MoD's RWR acquisition also covers the upgrade of the Sky Guardian on the RAF's Boeing CH-47 Chinook fleet. That contract has yet to be signed, but Alexander is "optimistic" this will follow soon.

In 2014 Selex provided Seer for demonstration on board the Czech air force's Aero Vodochody L-159 advanced light combat aircraft, to show that the upgraded



The system will be integrated on the 24-strong fleet

system could fit into the same form factor as the aircraft's legacy Sky Guardian.

Under this NATO tactical leadership programme initiative, Seer replaced Sky Guardian in under 3h and showed the capability of the self-protection system. ■

The Puma fleet has recently emerged from a £300 million (\$470 million) modernisation programme, raising it to the enhanced HC2 standard. Upgrades include new updated Turbomeca Makila 1A1 engines and an all-glass cockpit. ■

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STRATEGY KATE SANSFIELD LONDON

Sabreliner unveils its family planning

MRO provider evaluating a number business aircraft types to form the basis of a range of remanufactured platforms

Maintenance, repair and overhaul provider Sabreliner Aviation plans to follow in the footsteps of fellow US firm Nextant Aerospace and develop a family of remanufactured business aircraft, with its choice narrowing to “at least one type” in the turboprop, and light to large-cabin jet sectors.

“We are in negotiations with avionics suppliers and are doing engine studies for each of the models,” says president Greg Fedele. “The first aircraft could be launched early next year.”

A key issue for the Perryville, Missouri-based company is the size of the inventory available for modernisation. Sabreliner is looking at both in- and out-of-production types, but declines to disclose the models it is evaluating. “[But] we are not looking at the Beechcraft/Hawker 400, as Nextant has cornered that market and is doing very well there,” Fedele says.

However, he does not rule out potentially competing in the

market for upgraded King Air turboprops, where Nextant already offers a remanufactured and re-engined C90, called the G90XT.

The upgraded aircraft is set to enter service in the fourth quarter equipped with a Garmin G1000 cockpit and GE Aviation H75-100 engines. “Nextant is also looking at new products in the super-midsize to long-range sectors, so we are likely to compete with them here too,” says Fedele.

Sabreliner will offer a menu of upgrade options, from basic avionics, engine and interior retrofits on customer-owned aircraft to selling models that have been purchased and completely overhauled by the company.

“We have all the systems in place to launch a remanufacturing programme now,” Fedele says. “But we want to get it right. We are now doing in-depth market research. We aim to launch a product in each of the categories, starting with the first programme in 2016.” ■



The fractional ownership company has an order for 25 of the type

DELIVERIES KATE SANSFIELD LONDON

NetJets to offer Citation Latitude from July 2016

Fractional ownership company NetJets has firmed up the delivery schedule for its Cessna Citation Latitude business jets, with the first of the midsize type set to enter operation in July 2016.

The Berkshire Hathaway subsidiary – the world’s largest operator of business aircraft – placed an order in 2012 for 25 Latitudes as part a multi-billion dollar overhaul of its 500-strong fleet.

It says the aircraft, worth \$16 million each, will be absorbed into its US and European fleets over a two-year period.

NetJets also has options for 125 examples of the nine-passenger model, which received US Federal Aviation Administration certification in June and is poised to enter service this month.

The Latitude will form part of NetJets’ new midsize offering along with the larger-cabin Bombardier Challenger 350.

Twenty of the super-midsize aircraft are now in service across NetJets’ US and European programmes from a 2012 order for 75 of the 10-seat type. ■

VALIDATION KATE SANSFIELD LONDON

EASA grants approval to BBJ wing-tip modification

Aviation Partners (API) has secured European supplemental type certification for the split scimitar winglet (SSW) retrofit for the Boeing Business Jet family.

Validation from the European Aviation Safety Agency comes two months after US regulators granted approval for the aerodynamic wing-tip modification – developed jointly by API and Boeing – which is aimed at owners and operators of the BBJ, BBJ2, and BBJ3 VIP airliners.

The new winglet helps to reduce drag on long-range flights – and is claimed to boost range by around 2% or as much as

120nm (220km). API says the new wing tip – which will be fitted as standard to all new BBJs from next year – “completely redefines the aerodynamics of the existing blended winglet”.



API claims that the retrofit will boost range by as much as 120nm

The retrofit involves adding a new scimitar-tipped large ventral strake to API’s blended winglets, beefing up the internal winglet structure and replacing the aluminium winglet tip caps with

new aerodynamically shaped scimitar tip caps.

“This builds on the existing blended winglet design to provide a dramatic performance improvement,” says API.

The Seattle, Washington-based company has retrofitted two BBJs so far. Several projects are now in completion and others are scheduled to begin this year.

“We are seeing huge interest from the BBJ community,” says Gary Dunn, API vice-president of sales and marketing. “The upgrade will essentially give a BBJ with seven auxiliary fuel tanks the range of an eight auxiliary tank airplane.” ■



Airline profits soar
on lower oil price
NEWS FOCUS P22

ANALYSIS KATE SARSFIELD LONDON

GAMA figures paint positive picture

Quarterly statistics show business and general aviation aircraft manufacturers took in more money from fewer deliveries

Business and general aviation aircraft manufacturers achieved higher revenues in the second quarter of 2015 despite delivering fewer aircraft than in the same period a year earlier, according to the latest statistics from the General Aviation Manufacturers Association (GAMA).

Released on 31 July, the GAMA data shows that total aircraft deliveries fell by 24 units year on year to 573 in the period – but the value of those shipments rose by about \$150 million to \$5.89 billion. Overall the industry performed better in the second quarter than in the first three months of the year, when fixed-wing shipments plunged by 78 aircraft compared with the same period in 2014.

COURTING SUCCESS

The piston-engined sector was the best performer during this period. Thanks to the growing global market for single- and twin-engined piston training aircraft, deliveries climbed by 40% between April and June to 271 aircraft, compared with 193 during the previous three months.

Gains were made by a host of airframers: Diamond saw shipments of its DA42 piston-twin climb from seven to 20 aircraft; Cessna delivered 47 examples of its high-wing 172S compared with 31 in the preceding quarter, while Cirrus Aircraft shipped 74 of its SR-series of high-performance singles compared with 43 between January and March. In fact, the SR22 accounted for the bulk of Cirrus's deliveries as this model continues to court considerable success both in the inter-



Gulfstream is set to boost production of the G650 following strong demand for its flagship aircraft

national pilot training arena and in the burgeoning short-haul, low-cost air taxi market.

On a year-on-year basis, business jet deliveries also improved, climbing eight units to 172 aircraft in the second quarter of 2015. The bottom half of the business jet sector saw a 4% growth in overall shipments in the first six months of 2015 compared with the same period last year. This is due to a number of factors – in particular the strengthening US economy, which has triggered a re-emergence of corporate buyers, the entry into service of the Embraer Legacy 500 and Bombardier Challenger 350 twinjets, and the hike in new aircraft shipments to fractional ownership giant NetJets.

With the service entry of a number of keenly-awaited aircraft expected before the end of the year – the HondaJet, SyberJet SJ30i, Citation Latitude and Legacy 450 – this sector will be hoping to con-

tinue its positive growth trend.

In contrast, shipments of large-cabin, long-range business jets fell by 13% in the first six months to 125 aircraft. This decline is largely due to a waning appetite for big, long-distance aircraft from the previously thriving markets of China, Brazil and Russia. Dassault, for example, delivered 18 of its high-end Falcons during

The strengthening US economy has seen a re-emergence of corporate buyers

the first half of the year, seven fewer than the same period in 2014. Bombardier, which has already announced plans to reduce output of its Global line in response to falling demand, also shipped fewer Challenger 605s and Globals during the period.

Gulfstream fared a little better, however. It delivered 58 large-cabin, long-range jets in the first six months – only one fewer than last year – but is now set to boost production of the G650 following strong demand for its flagship aircraft.

Nonetheless, there are warnings of tougher times ahead. Aerospace analyst Brian Foley pre-

dicts “a systemic slowdown in the big cabin jet market”, from which “none of the airframers will be immune”.

The turboprop sector also saw a sluggish six months, with first-half deliveries of single- and twin-engined models sliding by around 10% year on year to 246 aircraft. The decline is almost entirely due to a fall in the sales of agricultural aircraft.

INDUSTRY EXPECTATIONS

Air Tractor, for example, recorded a drop in shipments of its AT-family from 88 to 66 this year. Thrush Aircraft also saw deliveries of its S2R series fall from 33 to eight aircraft. If the agricultural segment is excluded, the core business turboprop market has remained flat, GAMA reveals.

For aerospace analyst Rolland Vincent, the association's latest delivery numbers are in line with industry expectations. He predicts shipments will remain stable throughout the rest of the 2015, finishing the year “slightly up” on 2014. “All eyes will be on the fourth quarter,” he says, “which is shaping up to be an even larger contributor to annual results than it has been in the past, due to the large number of aircraft scheduled to enter service over the next five months. ■

BUSINESS AND GENERAL AVIATION AIRCRAFT DELIVERIES

| | Q1 2014 | Q2 2014 | Q1 2015 | Q2 2015 |
|----------------------|---------------|---------------|---------------|---------------|
| Piston | 241 | 285 | 193 | 271 |
| Turboprop | 125 | 148 | 116 | 130 |
| Jet | 154 | 164 | 133 | 172 |
| Total | 520 | 597 | 442 | 573 |
| Billings (bn) | \$5.16 | \$5.74 | \$4.51 | \$5.89 |

SOURCE: General Aviation Manufacturers Association



FINANCE GRAHAM DUNN LONDON

Airline profits soar on lower oil price

Rankings show the world's leading 100 carriers recorded fifth straight year of net profit as reduced fuel costs aid sector

For an industry so used to shocks and red ink over the past 15 years, it is perhaps unsurprising that airlines may take some convincing that they have never had it so good.

This year's World Airline Rankings – produced by *Flight International's* sister title *Airline Business* – show that net profits among the leading 100 carriers reached nearly \$12 billion in 2014, and over \$30 billion at an operating level.

This marks the fifth consecutive annual net profit among leading carriers and the sixth year of operating profits. And with oil prices back at more palatable levels, this appears set to

continue this year, with IATA projecting record industry profits in 2015.

Yet the mixed nature of the business means that while many are thriving, others remain under pressure. For some, still gripped with restructuring, there is the possibility the peak of the economic cycle may come and go without them profiting from the good times.

PROSPEROUS REGION

While fortunes within regions – and in some cases, sectors – differ widely, there is no doubt that North American carriers are leading the industry's new-found profitability.

North American carriers are leading the industry's new found profitability

The region's operators again prospered in 2014, as the World Airline Rankings show collective net profit for the leading American carriers of nearly \$8 billion. Although this is below the \$12 billion generated in 2013, that figure was distorted by Delta Air Lines' \$8 billion one-off income tax gain.

Collective operating profits showed the gains more clearly, increasing by \$3.5 billion to top \$17 billion in 2014. That contributed over half the profits of the top 100 carriers. While Europe was the second-most profitable region, generating collective operating profits of nearly \$6 billion last year, Asia-Pacific carriers are roughly on a par when a heavy non-cash writedown at Qantas is excluded.

American Airlines, after its successful merger with US Airways, generated the highest net profit last year, of almost \$3 billion. This marked a sharp turn-

round on losses the previous year related to one-off restructuring costs. American's group net profit was almost double the amount of the next highest, Emirates.

American also led the way in 2014 in operating profits. The carrier, together with fellow US operators United-Continental, Southwest Airlines and Delta, generated collective operating profits of around \$11 billion.

One of the keys to the improved profit performance was the sharp drop in oil prices in the second half of 2014, which was as unexpected as it was welcome. The barrel price of crude oil had picked up a little to around \$60/barrel, but has dipped again to the \$50/barrel mark. Regardless, this key commodity remains significantly below 2014 levels.

HEDGING STRATEGIES

But while lower fuel prices should equal reduced costs for airlines, they do not automatically translate to that.

This is partly because most airlines have to some extent been tied to hedging strategies which took the edge off fuel pain when oil prices were at their highest. Depending on how much unwinding it could take,



IATA is predicting the positive trend to continue in 2015 results

REX FEATURES

US success story continues but capacity discipline remains paramount

North American carrier profits, and those of US airlines in particular, continue to dominate the improved global industry performance, even with concerns around the US economy and capacity issues.

Much of this performance has been fuelled by consolidation and tight capacity discipline. The latter now is under scrutiny, both from the markets and, more literally, from competition regulators, after the US Department of Justice revealed it is investi-

gating the possibility of collusion between US airlines on domestic capacity growth.

Wall Street analysts were quick to criticise the move. As Jamie Baker, an analyst at JP Morgan, noted in a 2 July report: "The implication that airlines currently enjoy pricing power flies in the face of current data. Roughly 80% of fare increases we track have failed in recent years – so we can't help but find humour in the suggestion of collusion."

Indeed, the markets of late

have been more concerned about a lack of discipline. Gone are the days of near universal passenger unit revenue gains, with "capacity discipline" the buzzwords of the industry.

TRIMMED CAPACITY

Analysts now write of "capacity creep" and quarterly drops in unit revenues. The airlines have responded by trimming planned capacity increases for the second half of the year.

Not that anyone has been rais-

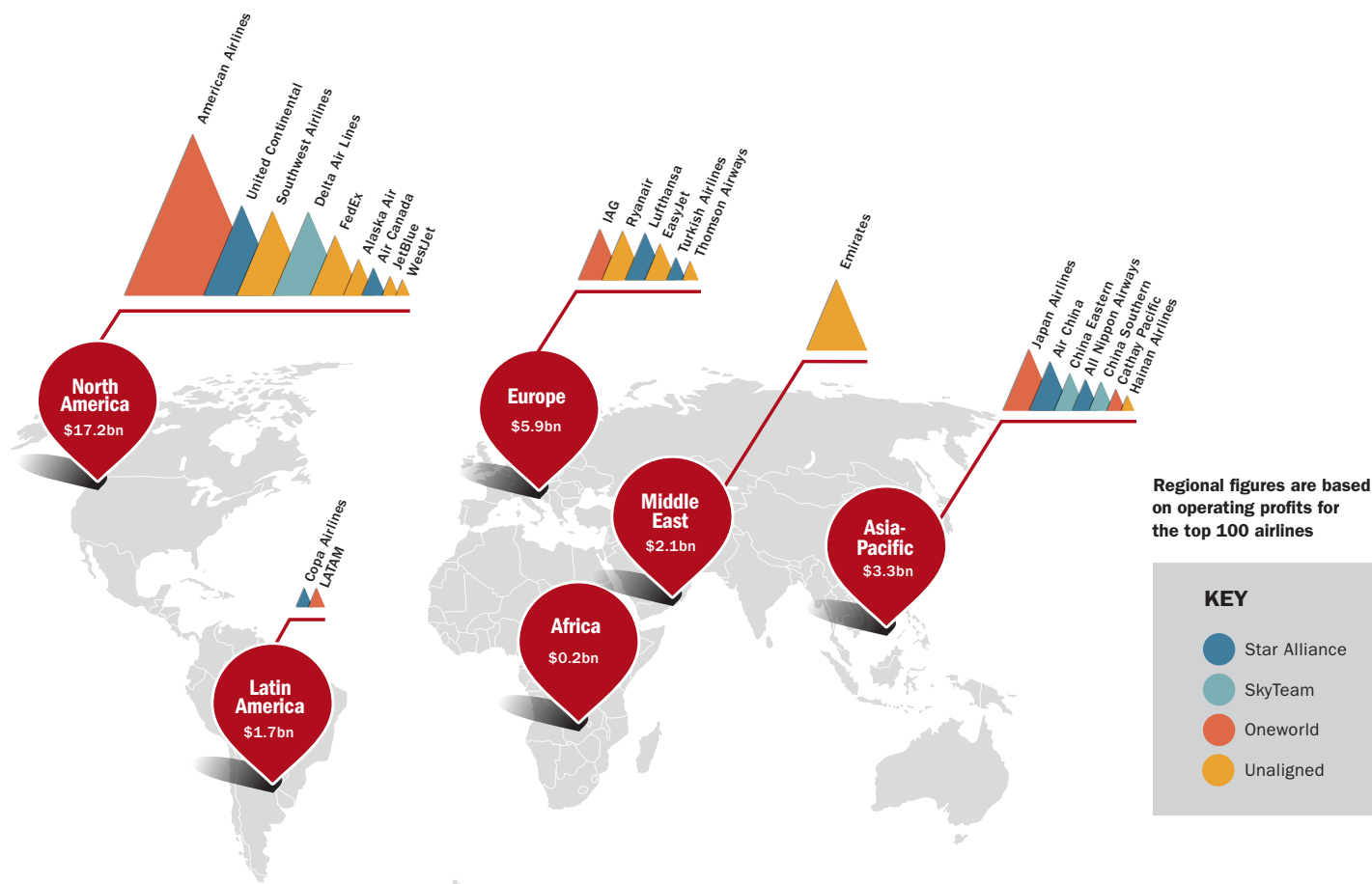
ing a red flag. US carriers are still widely expected to continue to lead as the industry heads for record profits this year. Indeed, IATA in its June forecast further lifted net profit expectations for this year among North American carriers, to \$15.7 billion.

Wall Street analysts and ratings agencies also expect robust profits and margins from North American carriers this year, despite the weaknesses in the US market and the capacity creep that they have written so much about.



Making it count
CENSUS P24

WORLD AIRLINE RANKINGS



and when it will occur, airlines will initially have to take some one-off charges to settle these.

Delta, for example, took a \$372 million hit in mark-to-market fuel hedge losses in the first quarter of 2015, but was still able to double its profits in the period, aided by lower fuel prices.

Further complicating the potential fuel gains is the rapid strengthening of the US dollar against many currencies. This has had a big impact on costs paid for in US dollars for those airlines in non US-dollar-denominated countries – and has further contributed to the split in fortunes between the highly

profitable North American operators and those in other regions. This mitigates the gains from lower fuel costs.

DOLLAR DIFFERENCE

This also has an impact on the World Airline Rankings, which lists airline financials in US dollars for comparison purposes, as

the change versus 2013 is impacted by the stronger US dollar.

As a result, for most airlines not reporting in US dollars, the comparison versus 2013 in US dollars is less favourable than when reported in local currency, especially for those with a financial year that ended in March 2015. ■

See Airliner Census P26

Recently published second quarter results illustrate continued US airline profitability. For example, second quarter operating profits were up by a third at American Airlines, to \$1.9 billion, by nearly \$900 million to just under \$2.5 billion at Delta Air Lines, and by \$500 million to a record high of almost \$1.5 billion at United Airlines.

One of the keys has been lower fuel prices, which are providing US airlines with a windfall this year.

Net savings could total up to \$5 billion at American, \$2 billion at Delta, about \$1.7 billion at Southwest Airlines and an estimated \$4 billion at United, driving impressive cash flow and margin gains.

CASH RETURNS

The airlines have said they plan to use these savings to accelerate their respective capital deployment programmes – primarily reducing debt and returning cash to shareholders.



Delta's second quarter operating profits rose by \$900 million

MAKING IT COUNT

Our annual snapshot of the global airliner fleet shows deliveries of current single-aisle types are holding up, while the 787 has debuted in the top 10 mainline aircraft

MURDO MORRISON LONDON
DATA ANALYSIS **ANTOINE FAFARD**

Airlines, it seems, cannot get enough of Airbus and Boeing narrowbodies. With the latest re-engined versions of the A320 family and the 737 due to enter service in the next two years, and both manufacturers sitting on hundreds of orders, deliveries of their existing single-aisle types have continued to mount over the past 12 months.

According to Flightglobal's latest annual airliner census – a breakdown of the world's fleet of commercial aircraft by type and operator – numbers of current-generation A320s and 737s in service rose by 7.9% and 9.1%, respectively. This was a faster growth in the fleet size than in the period between 2013 and 2014. There are now just over 6,000 A320 family jets in service and more than 5,100 of the current iteration of Boeing's rival.

Because fast-expanding carriers are not pre-

pared to wait for equipment that they need as soon as possible, Toulouse and Seattle have been in the envious position over the past few years of enjoying robust demand for their existing aircraft types, even though their successors are waiting in the wings. This has not been the case in wide-bodies, where production of, for example, the A330 is tailing off as Airbus prepares to introduce the A330neo.

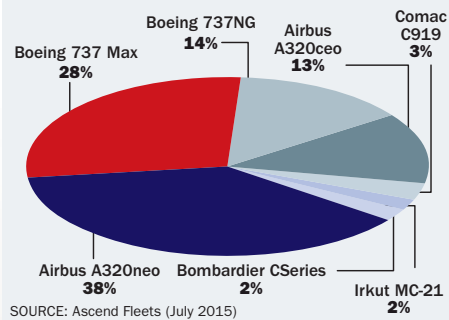
CLOSE TALLIES

The A320 family still tops the list of most popular mainline aircraft, although it is just pipped if older-generation Boeing 737s are added to the tally. In total there are some 6,100 Boeing narrowbodies in service (not counting the 717 and earlier McDonnell Douglas variants, of which there are 666), compared with 6,052 of the A320, which does not, of course, have an earlier vintage equivalent. A year ago, it looked like the A320 would soon overtake the 737 if old and current versions were combined, but higher deliveries of the Boeing narrowbody have ensured the gap remains.

Further down the list, the Boeing 787 has finally entered the top 10, displacing the long out-of-production Airbus A340. There are now 286 Dreamliners in service, a more than three-



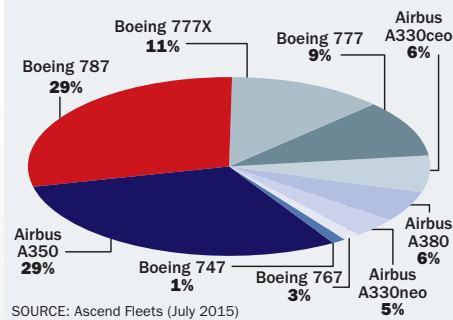
NARROWBODIES: ORDER BACKLOG MARKET SHARE



quarters rise on the previous year, and this figure will leap again next year as output ramps up. However, it may be a few years before retirements of other aircraft either out of production or nearing the end of the line mean the all-composite widebody vaults up the list.

The order otherwise remains virtually the same as in 2014, the only other change being the 757 and 767 swapping places, due to numbers of the smaller aircraft falling faster (down 8.7% to 738 aircraft) than the still-in-production 767 (down 2.9% to 765 examples). The 777 remains in third place, with a 6.6% rise in the

WIDEBODIES: ORDER BACKLOG MARKET SHARE



fleet. Despite output now slackening, the A330 had a good year in terms of deliveries with a 7.9% increase taking the fleet of the small Airbus twin-aisle to 1,095.

With the slow-selling Airbus A380 still far from troubling the top 10 and despite sluggish sales of the latest 747-8, the venerable Boeing jumbo jet remains queen of the skies when it comes to ultra-large aircraft with 571 in service, a modest decline of 1.7% from last year.

In regional aircraft, Embraer and ATR have been the biggest winners in terms of deliveries, with the Brazilian manufacturer's

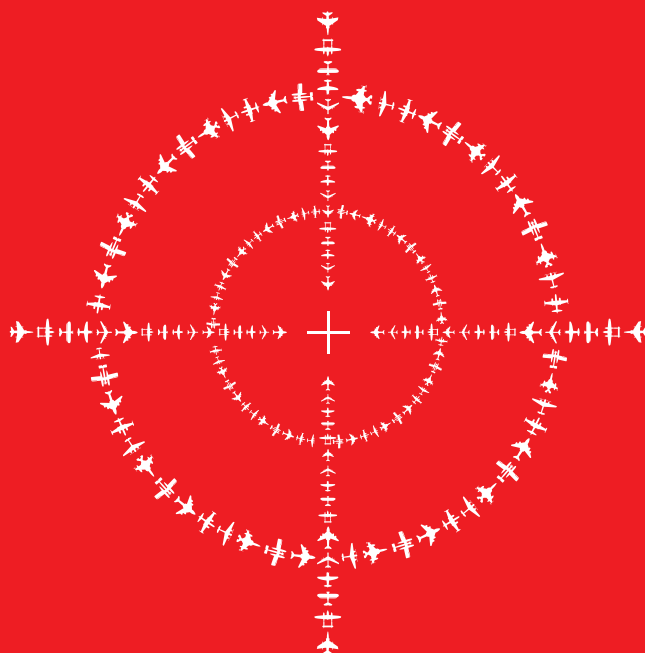
Despite output slackening, the A330 had a good year in terms of deliveries with a 7.9% increase

E-Jet fleet having nudged over the 1,000 aircraft barrier last year, rising 10% to just over 1,100 aircraft. This puts Embraer in a strong position as it prepares to introduce its re-engined range. The fleet of ATR 72s grew even faster, by 11.2%, to 696 aircraft. In fact, when numbers of the smaller and less popular ATR 42 are included (its fleet stayed virtually firm at 250 aircraft), the Franco-Italian airframer is left with a tally of 946 aircraft, a remarkable success given the fact that many were writing off the brand a decade ago.

Troubled Bombardier may not have a re-vamped regional jet on the launch pad, as it continues to devote its energies to bringing its CSeries narrowbody family to certification, but deliveries of its three in-production CRJ variants remain robust, with a 7.6% increase in the fleet to 696 aircraft between 2014 and

British Airways is one of five A318 operators





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» 2015. The fleet of its other in-production regional aircraft – the Q400 turboprop – grew by the same percentage, resulting in a fleet of 454. Numbers of older generation Dash 8s diminished, with the fleet of Dash 8-100/200/300s falling below their newer sibling.

THIRSTY BUSINESS

Fleets of older and smaller CRJ variants – the CRJ100 and CRJ200 – have also shrunk substantially as airlines and passengers continue to fall out of love with thirsty 50-seat jets. A similar fate has befallen Embraer's ERJ range. There are 7.3% fewer ERJ-135/140/145 aircraft flying around the world.

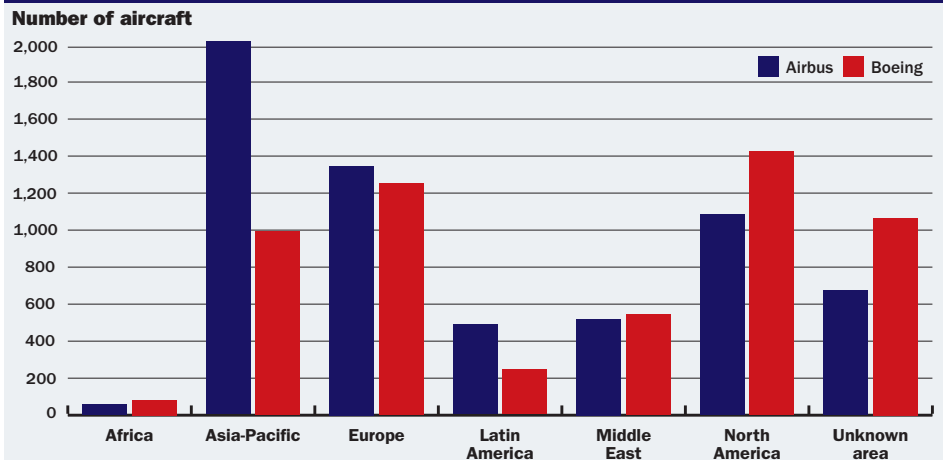
Deliveries of the Twin Otter are on the up again following the relaunch of the Canadian two-engined turboprop by Vancouver Island-based Viking. Last year, with Viking production only beginning to gear-up, retirements of older examples of the 50-year-old type saw overall numbers decline slightly. This year, the fleet is back up to 267 aircraft. The other out-of-production programme on the list has not surprisingly seen a drop in numbers, with Beechcraft 1900s declining by 3.4% to 341.

The venerable Boeing jumbo jet remains queen of the skies when it comes to ultra-large aircraft

There have been some small but significant shifts in the distribution of the airliner fleet, mostly accounted for by Asia's emergence as a major aviation region. Asia-Pacific now accounts for 27% of commercial airliners in service, up from 25% in 2014. In contrast, North America, which still leads with 31% of the fleet, has seen a 1% decline. Europe's share has dropped by the same percentage to 24%.

Manufacturer orderbooks give us an indication of the likely future shape of the global fleet. The A320neo is still well out in front, with a backlog of 3,864 aircraft, representing 38% of total narrowbody orders. The 737 Max – which is behind its Airbus rival in terms of entry into service – is

AIRBUS/BOEING COMMERCIAL ORDER BACKLOG BY REGION



SOURCE: Ascend Fleets from Flightglobal (July 2015)

TOP 10 FLEETS – MAINLINE AIRCRAFT

| Manufacturer and aircraft family | In-service fleet | | Change |
|----------------------------------|------------------|-------|--------|
| | 2015 | 2014 | |
| Airbus A320 family | 6,052 | 5,609 | 7.9% |
| Boeing 737-600/700/800/900 | 5,102 | 4,678 | 9.1% |
| Boeing 777 | 1,265 | 1,187 | 6.6% |
| Airbus A330 | 1,095 | 1,015 | 7.9% |
| Boeing 737-200/300/400/500 | 1,033 | 1,058 | -2.4% |
| Boeing 767 | 765 | 788 | -2.9% |
| Boeing 757 | 738 | 808 | -8.7% |
| Boeing 717/MD-80/MD-90/DC-9 | 666 | 738 | -9.8% |
| Boeing 747 | 571 | 581 | -1.7% |
| Boeing 787 | 286 | 162 | 76.5% |

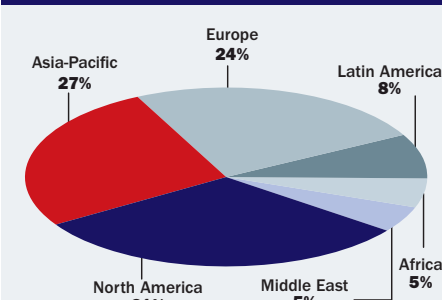
SOURCE: Ascend Fleets. Data for 19 July 2015 vs 19 July 2014

TOP 10 FLEETS – REGIONAL AIRCRAFT

| Manufacturer and aircraft family | In-service fleet | | Change |
|----------------------------------|------------------|-------|--------|
| | 2015 | 2014 | |
| Embraer 170/175/190/195 | 1,102 | 1,002 | 10.0% |
| Bombardier CRJ700/900/1000 | 696 | 647 | 7.6% |
| ATR 72 | 644 | 579 | 11.2% |
| Embraer ERJ-135/140/145 | 620 | 669 | -7.3% |
| Bombardier CRJ100/200 | 563 | 650 | -13.4% |
| Bombardier Dash 8 Q400 | 454 | 422 | 7.6% |
| Bombardier Dash 8-100/200/300 | 428 | 441 | -2.9% |
| Beechcraft 1900 | 341 | 353 | -3.4% |
| De Havilland Canada Twin Otter | 267 | 263 | 1.5% |
| ATR 42 | 250 | 252 | -0.8% |

SOURCE: Ascend Fleets. Data for 19 July 2015 vs 19 July 2014

AIRLINER FLEET DISTRIBUTION



SOURCE: Ascend Fleets from Flightglobal (July 2015)

next with 2,825 orders, or 28%. Boeing's current-generation narrowbody trumps its European competitor, with a backlog of 1,408 737s (14% of the backlog), compared with 1,267 for the A320ceo (13%). The new market entrants from Comac, Irkut and Bombardier make up the numbers with a combined 7%, or nearly 700 aircraft in total. The total narrowbody backlog is 10,052.

In terms of widebodies, the A350 is closing in on 787, with a 775-strong backlog for the Airbus twin-aisle (29%), compared with 781 for the Dreamliner (also 29%). In last year's census, the 787 had a 32% share of the spoils to the A350's

28%. Both Boeing's current 777 and its successor continue to sell well, with 306 777Xs on order (11%), and a further 253 of the current large twin (9%). Airbus's A330neo, not officially launched as figures for last year's census were compiled, now has 145 orders, with another 167 for the existing A330 variant, a figure still causing Airbus some concern as it looks to bridge the production gap to 2017. There are 149 Airbus A380s on backlog, most of them to Emirates, with small numbers of the 767 and 747-8 completing the listing. There are a total of 2,685 widebodies on order. ■

EXPLANATORY NOTES

This census data covers all commercial jet and turboprop-powered transport aircraft in service or on firm order with airlines worldwide, excluding aircraft that carry fewer than 14 passengers or equivalent cargo. It records the fleets of Western, Chinese-built and Russia/CIS/Ukraine-built airliners.

The tables have been compiled by Flightglobal Insight using Flightglobal's Ascend Fleets database. The information is correct up to July 2015 and excludes non-airline operators, such as leasing companies and the military. Aircraft are listed in alphabetical order, first by manufacturer and then type. Operators are listed by region, with any aircraft variant in brackets next to the operator's name.

Fleet data comprises the in-service fleet and, where applicable, the outstanding firm orders in

parentheses in the right-hand column.

On the Ascend database, an airliner is defined as being "in service" if it is "active" (in other words accumulating flying hours). An aircraft is classified as "parked" if it is known to be inactive – for example, if it is grounded because of airworthiness requirements or in storage – and when flying hours for three consecutive months are reported as zero. Aircraft undergoing maintenance or awaiting conversion are also counted as being parked.

The region is dictated by operator base and does not necessarily indicate the area of operation. Options and letters of intent (where a firm contract has not been signed) are not included. Orders by, and aircraft with, leasing companies and holding companies such as China Aviation Supplies are

excluded, unless a confirmed end-user is known – in which case the aircraft is shown against the airline concerned. Operators' fleets include leased aircraft.

Abbreviations

AR: advance range (Embraer 170/190/195)
C: combi or convertible
ER: extended range
ERF: extended range freighter (747 and 767)
F: freighter
LR: long range
PF: package freighter (757)
QC: quick change
SF: special freighter

GLOBAL AIRLINER FLEET BY TYPE AND OPERATOR

| | | | | | | | |
|--|------------|--|-------------------|----------------------------------|----------------|--|--------------------|
| AIRBUS A300 | 207 | Avianca | 10 | Atlantic Airways (Faroe Islands) | 3 | TAME | 4 |
| Africa | 7 | Avianca Brazil | 13 | AtlasGlobal | 1 | United Airlines | 55 |
| CEIBA Intercontinental (B) | 1 | AIRBUS A319 | 1,328 (13) | Aurora | 7 | VECA | 2 |
| Egyptair (600) | 2 | Africa | 29 | Austrian | 7 | Virgin America | 10 |
| Egyptair (B) | 1 | Afriqiyah Airways | 1 | Azerbaijan Airlines | 3 | Volaris | 18 |
| Sudan Airways (600) | 2 | Air Côte d'Ivoire | 3 | B&H Airlines | (2) | AIRBUS A319NEO | (37) |
| Tristar Air (B) | 1 | Air Mauritius | 2 | Belair | 2 | North/South America | (37) |
| Asia, Australasia & Middle East | 47 | Air Namibia | 4 | British Airways | 44 | Avianca | (19) |
| Air Hong Kong (600) | 10 | Fastjet Tanzania | 3 | Brussels Airlines | 18 | Frontier Airlines | (18) |
| DHL International Aviation EEMEA (600) | 1 | First Nation Airways | 2 | Bulgaria Air | 2 | AIRBUS A320 | 3,600 (560) |
| Global Charter Services | 1 | South African Airways | 8 | Croatia Airlines | 4 (4) | Africa | 86 (16) |
| Global Charter Services (B) | 3 | Syphax Airlines | 2 | Czech Airlines | 8 | Afriqiyah Airways | 3 |
| Global Jet Airlines (600) | 1 | Tunisair | 4 | Donavia | 10 | Air Algerie | 1 |
| Iran Air (600) | 4 | Asia, Australasia & Middle East | 256 (3) | easyJet | 136 | Air Arabia Egypt | 1 |
| Iran Air (B) | 3 | Air Astana | 1 | easyJet Switzerland | 13 | Air Arabia Maroc | 4 |
| Kuwait Airways (600) | 5 | Air China | 31 (1) | Ellinair | 1 | Air Cairo | 7 |
| Mahan Air (600) | 14 | Air India | 22 | Finnair | 9 | Air Cote d'Ivoire | 1 |
| Qeshm Airlines (600) | 3 | Air Macau | 4 | Germania | 7 | Air Go Airlines | 1 |
| Silk Road Cargo Business (600) | 1 | Bangkok Airways | 11 | Germanwings | 43 | Air Seychelles | 2 |
| Unique Air (600) | 1 | Bhutan Airlines | 2 | Hamburg International | (2) | Air Zimbabwe | 1 |
| Europe | 31 | Capital Airlines | 22 | HolidayJet | 2 | Almasria Universal Airlines | 2 |
| Airbus Transport International (600) | 5 | Cebu Pacific Air | 10 | Iberia | 15 | CAA – Compagnie Africaine d'Aviation | 2 |
| European Air Transport (600) | 20 | Chengdu Airlines | 3 | Lufthansa | 30 | Egyptair | 10 |
| MNG Airlines (600) | 6 | China Eastern Airlines | 30 (1) | Niki | 5 | Ghadames Air Transport | 1 |
| North/South America | 122 | China Eastern Airlines Jiangsu | 4 | Rossiya – Russian Airlines | 16 | Libyan Airlines | 3 |
| FedEx (600) | 68 | China Southern Airlines | 39 | S7 Airlines | 20 | Nesma Airlines | 3 |
| Transcarga International Airways (B) | 2 | Chongqing Airlines | 4 | SAS | 4 | Nile Air | 4 (2) |
| UPS Airlines (600) | 52 | Druk Air | 4 | Swiss | 6 | Nouvelair Tunisie | 8 |
| AIRBUS A310 | 62 | Etihad Airways | 2 | TAP Portugal | 21 | Senegal Airlines | 1 |
| Africa | 1 | Gulf Air | (1) | Thomas Cook Airlines Belgium | 1 | South African Airways | 12 (10) |
| Services Air | 1 | Lucky Air | 3 | Turkish Airlines (THY) | 14 | Sudan Airways | 1 |
| Asia, Australasia & Middle East | 24 | Mihin Lanka | 1 | Ural Airlines | 6 | Sun Air | 1 |
| Biman Bangladesh Airlines | 2 | Myanmar Airways International | 3 | VIM Airlines | 4 | Tunisair | 17 (4) |
| Iran Air | 2 | Rotana Jet | 1 | Vueling Airlines | 5 | Asia, Australasia & Middle East | 1,657 (271) |
| Mahan Air | 8 | Royal Brunei Airlines | 2 | North/South America | 483 (2) | Air Arabia | 35 (9) |
| Pakistan International Airlines | 5 | Royal Jordanian | 4 | Air Canada | 16 | Air Arabia Jordan | 3 |
| Royal Jordanian | 2 | Safi Airways | 1 | Air Canada Jetz | 2 | Air Astana | 8 |
| Taban Air | 2 | Shenzhen Airlines | 5 | Air Canada Rouge | 20 | Air Bishkek | 1 |
| United Airways | 1 | Sichuan Airlines | 24 | Allegiant Air | 7 | Air Busan | 3 |
| Yemenia | 2 | SilkAir | 5 | American Airlines | 125 | Air China | 39 |
| Europe | 8 | SpiceJet | 1 | Avianca | 13 (2) | Air India | 20 (3) |
| SATA International | 3 | Tibet Airlines | 13 | Avianca Brazil | 4 | Air Macau | 2 (1) |
| TAROM | 1 | West Air (China) | 4 | Avianca Costa Rica | 2 | Air New Zealand | 26 (3) |
| Turkish Airlines (THY) | 1 | Europe | 560 (8) | Avianca Ecuador | 6 | AirAsia | 80 (3) |
| ULS Airlines Cargo | 2 | Adria Airways | 3 | Avianca El Salvador | 12 | AirAsia India | 5 |
| White | 1 | Aegean Airlines | 1 | Avianca Peru | 1 | AirAsia Japan | (2) |
| North/South America | 29 | Aer Lingus | 4 | Cubana | 1 | AirAsia Zest | 14 |
| Air Transat | 9 | Aeroflot Russian Airlines | 7 | Delta Air Lines | 57 | Airblue | 4 |
| FedEx | 20 | Aigle Azur | 3 | Frontier Airlines | 34 | AirCalin | 2 |
| AIRBUS A318 | 47 | Air France | 38 | LAN Airlines | 5 | Al Maha Airways | (2) |
| Europe | 24 | Air Malta | 4 | LAN Ecuador | 6 | ANA – All Nippon Airways | 12 |
| Air France | 18 | Air Moldova | 1 | LAN Peru | 14 | Ariana Afghan Airlines | 3 |
| British Airways | 2 | Air Serbia | 8 | Sky Airline | 13 | Asiana Airlines | 7 |
| TAROM | 4 | airberlin | 2 | Spirit Airlines | 29 | ATA Air | 2 |
| North/South America | 23 | Alitalia | 22 | TAM Linhas Aereas | 27 | Atrak Air | 2 |



The Airbus A320 family is still the most popular mainline aircraft

| | | | | | | | |
|---------------------------------|----------|------------------------------------|--------------------|-----------------------------------|-----------------|--|----------------|
| Bangkok Airways | 8 | Safi Airways | 1 | Czech Airlines | (7) | Delta Air Lines | 69 |
| Bassaka Air | 2 | Saudia | 35 (30) | DAT – Danish Air Transport | 3 | Dominican Wings | 1 |
| Batik Air | 8 (3) | SaudiGulf Airlines | (4) | easyJet | 82 (51) | Frontier Airlines | 22 (2) |
| Capital Airlines | 30 (3) | Shaheen Air International | 7 | easyJet Switzerland | 11 | Interjet | 39 |
| Cebgo | 4 | Shenzhen Airlines | 66 (3) | Edelweiss Air | 5 | JetBlue Airways | 130 |
| Cebu Pacific Air | 27 (7) | Sichuan Airlines | 44 (4) | Eurowings | 6 (23) | LAN Airlines | 42 (1) |
| Cham Wings | 1 | SilkAir | 13 | Evelop Airlines | 2 | LAN Argentina | 12 |
| Chengdu Airlines | 14 | Sky Angkor Airlines | 3 | Finnair | 10 | LAN Colombia | 10 |
| China Eastern Airlines | 128 (11) | Solomon Airlines | 1 | Freebird Airlines | 9 | LAN Peru | 8 |
| China Eastern Airlines Jiangsu | 26 | Spring Airlines | 50 | Germanwings | 18 | Mexicana | (4) |
| China Southern Airlines | 118 (3) | SriLankan Airlines | 6 | Hermes Airlines | 1 | Sky Airline | 3 |
| Chongqing Airlines | 7 | Star Flyer | 9 (1) | Iberia | 12 | Spirit Airlines | 42 (13) |
| Citilink | 35 (10) | Syrianair | 6 | Iberia Express | 20 | TAM Linhas Aereas | 83 |
| Dragonair | 15 | Thai AirAsia | 43 (2) | Jet2 | 1 | TAME | 5 |
| Etihad Airways | 23 | Thai Airways International | 5 | Limitless Airways | 1 | United Airlines | 97 |
| Flynas | 24 (20) | Thai Smile | 13 (2) | Lufthansa | 52 (13) | Virgin America | 44 (9) |
| GoAir | 19 | Thai VietJet Air | 1 | Monarch Airlines | 8 | VivaAerobus | 8 (10) |
| Gulf Air | 16 | Tianjin Airlines | 18 | Niki | 13 | VivaColombia | 8 |
| Hong Kong Airlines | 8 (4) | Tibet Airlines | 1 | Onur Air | 10 | Volaris | 33 (13) |
| Hong Kong Express Airways | 12 | Tigerair | 23 | Pegasus | 9 (2) | AIRBUS A320NEO | (1,935) |
| IndiGo | 96 | Tigerair Australia | 13 | Privilege Style | 2 | Africa | (3) |
| Indonesia AirAsia | 29 | Tigerair Taiwan | 5 (1) | Rossiya – Russian Airlines | 11 | Syphax Airlines | (3) |
| Iran Air | 5 | TransAsia Airways | 5 | Ryanair | 2 | Asia, Australasia & Middle East | (1,017) |
| Iran Aseman Airlines | 3 | Uzbekistan Airways | 9 | S7 Airlines | 19 (23) | Air Astana | (2) |
| Iraqi Airways | 3 | Vanilla Air | 8 | SAS | 13 | Air New Zealand | (14) |
| Isirair | 2 (2) | VietJet Air | 23 (9) | SATA International | 3 | AirAsia | (304) |
| Jazeera Airways | 7 | Virgin Australia Regional Airlines | 2 | Small Planet Airlines (Lithuania) | 4 | ANA – All Nippon Airways | (7) |
| Jetstar | 53 | Vistara | 6 (7) | Small Planet Airlines (Poland) | 8 | China Southern Airlines | (19) |
| Jetstar Asia | 18 | West Air (China) | 14 | Smartlynx Estonia | 2 | Citilink | (35) |
| Jetstar Japan | 20 | Yemenia | 2 (4) | Swiss | 23 | GoAir | (72) |
| Jetstar Pacific | 8 | Zagros Airlines | 5 | TAP Portugal | 19 | Gulf Air | (10) |
| Jordan Aviation | 1 | Europe | 1,011 (204) | Thomas Cook Airlines | 5 | IndiGo | (180) |
| Juneyao Airlines | 36 (1) | Adria Airways | 1 | Thomas Cook Airlines Belgium | 5 | Jetstar | (99) |
| Kam Air | 1 | Aegean Airlines | 35 (4) | Travel Service Airlines | 5 | Kuwait Airways | (15) |
| Kingfisher Airlines | (67) | Aer Lingus | 30 | Travel Service Slovakia | 1 | Lion Air | (118) |
| Kuwait Airways | 10 | Aeroflot Russian Airlines | 63 (30) | Turkish Airlines (THY) | 29 | Middle East Airlines | (5) |
| Lao Airlines | 4 | Aigle Azur | 7 | Ural Airlines | 19 (7) | Mihin Lanka | (2) |
| Lion Air | (40) | Air Corsica | 5 | Virgin Atlantic Airways | 3 | Qatar Airways | (36) |
| Loong Air | 7 (2) | Air France | 45 (3) | Vueling Airlines | 94 (13) | Royal Brunei Airlines | (7) |
| Lucky Air | 4 | Air Malta | 6 | White | 1 | Tigerair | (39) |
| Maldivian | 1 | Air Moldova | 3 | Wind Rose Aviation Company | 2 | VietJet Air | (42) |
| Middle East Airlines | 11 | Air Serbia | 2 | Wizz Air | 62 (22) | Vistara | (7) |
| Mihin Lanka | 1 | Air VIA | 2 | WOW air | 3 | Yemenia | (4) |
| Myanmar Airways International | 1 | airberlin | 30 (5) | Yamal Airlines | 6 | Europe | (421) |
| Nepal Airlines | 2 | Alitalia | 44 | YanAir | 1 | Air Serbia | (10) |
| Pakistan International Airlines | 9 | Astra Airlines | 1 | North/South America | 846 (69) | British Airways | (13) |
| PAL Express | 11 | Atlantic Airways (Faroe Islands) | (1) | Air Canada | 37 | easyJet | (100) |
| Peach | 15 (5) | AtlasGlobal | 6 | Air Canada Jetz | 5 | Lufthansa | (61) |
| Philippine Airlines | 10 | Austrian | 16 | Allegiant Air | 9 | Norwegian | (100) |
| Philippines AirAsia | 1 | Azerbaijan Airlines | 7 | American Airlines | 55 | Pegasus | (57) |
| Qatar Airways | 37 | Belair | 6 | Aruba Airlines | 2 | SAS | (30) |
| Qeshm Airlines | 2 | BH Air | 3 | Avianca | 37 (13) | Swiss | (10) |
| Qingdao Airlines | 6 (1) | British Airways | 63 | Avianca Brazil | 21 (4) | Transaero Airlines | (8) |
| R Airlines | 1 | Brussels Airlines | 7 | Avianca Costa Rica | 8 | Vueling Airlines | (32) |
| Royal Brunei Airlines | 4 (2) | Bulgaria Air | 1 | Avianca Ecuador | 3 | North/South America | (494) |
| Royal Falcon Airlines | 1 | Condor | 10 | Avianca El Salvador | 8 | Avianca | (110) |
| Royal Jordanian | 6 | Corendon Dutch Airlines | 1 | Avianca Peru | 1 | Azul | (53) |
| Royal Wings | 1 | Croatia Airlines | 2 | Cubana | 4 | Frontier Airlines | (62) |

A view from an airplane window at night, showing a runway with lights and a bright light streak in the sky.

**FROM SHARED VISION TO SHARED
A BETTER WAY TO FLY.**

VALUE

Built into every Boeing airplane is a relationship that transcends route maps and data points. It's a personal commitment to share your vision and understand your business like no one else can. A commitment that continually delivers products, technologies and services that create bigger opportunities for you today and tomorrow. It's a nonstop commitment to superior value. That's a better way to fly.



| | |
|--|--------------------|
| Interjet | (40) |
| JetBlue Airways | (25) |
| LAN Airlines | (36) |
| Spirit Airlines | (45) |
| TAM Linhas Aereas | (15) |
| Virgin America | (30) |
| VivaAerobus | (40) |
| Volaris | (38) |
| AIRBUS A321 | 1,075 (345) |
| Africa | 8 |
| Almasria Universal Airlines | 2 |
| Daallo Airlines | 1 |
| Egyptair | 4 |
| Jubba Airways | 1 |
| Asia, Australasia & Middle East | 430 (43) |
| Air Astana | 4 |
| Air Busan | 6 |
| Air China | 51 (1) |
| Air India | 19 |
| Air Macau | 9 (3) |
| Airblue | 4 |
| ANA – All Nippon Airways | (4) |
| Asian Wings Airways | 1 |
| Asiana Airlines | 25 |
| Cambodia Angkor Air | 4 |
| China Eastern Airlines | 36 (3) |
| China Eastern Airlines Jiangsu | 6 |
| China Southern Airlines | 79 |
| Dragonair | 8 |
| Etihad Airways | 6 (4) |
| EVA Air | 16 (2) |
| Gulf Air | 6 |
| Iraqi Airways | 2 |
| Jetstar | 6 |
| Jetstar Pacific | 2 |
| Juneyao Airlines | 8 (1) |
| Maldivian | 1 |
| Middle East Airlines | 2 |
| Mihin Lanka | 2 |
| Philippine Airlines | 19 (5) |
| Qatar Airways | 8 |
| R Airlines | 1 |
| Royal Jordanian | 2 |
| Saudia | 15 |
| Sichuan Airlines | 26 (1) |
| SriLankan Airlines | 2 |
| TransAsia Airways | 2 (4) |
| V air | 2 |
| VietJet Air | 1 (12) |
| Vietnam Airlines | 49 (3) |
| Europe | 404 (95) |
| Aegean Airlines | 8 |
| Aer Lingus | 3 |
| Aeroflot Russian Airlines | 26 (19) |
| Air France | 21 |
| Air Méditerranée | 4 |
| Air Moldova | 1 |
| airberlin | 18 (5) |
| Alitalia | 11 |
| AtlasGlobal | 13 |
| Austrian | 6 |
| British Airways | 18 |
| Condor | 7 |
| Finnair | 11 |
| Freebird Airlines | 1 |
| Germania | 5 |
| Hi Fly | 1 |
| Iberia | 17 |
| Lufthansa | 64 |
| MetroJet | 5 |
| Monarch Airlines | 25 |
| Niki | 4 |
| Nordwind Airlines | 8 |
| Novair | 3 |
| Onur Air | 9 |
| S7 Airlines | 4 |
| SAS | 8 |
| Swiss | 8 (1) |
| TAP Portugal | 3 |
| Thomas Cook Airlines | 17 |

| | |
|--|------------------|
| Thomas Cook Airlines Scandinavia | 8 (4) |
| Transaero Airlines | 1 (5) |
| Turkish Airlines (THY) | 49 (19) |
| Ural Airlines | 10 |
| UTair | (8) |
| Vueling Airlines | 3 (7) |
| Wizz Air | (27) |
| WOW air | 2 |
| Yamal Airlines | 2 |
| North/South America | 233 (207) |
| Air Canada | 13 |
| American Airlines | 160 (59) |
| Avianca | (1) |
| Avianca Costa Rica | 1 |
| Avianca El Salvador | 7 (3) |
| Avianca Peru | 1 |
| Delta Air Lines | (45) |
| Frontier Airlines | (19) |
| JetBlue Airways | 19 (27) |
| LAN Airlines | 4 (7) |
| Spirit Airlines | 3 (29) |
| TAM Linhas Aereas | 23 (17) |
| Volaris | 2 |
| AIRBUS A321NEO | (581) |
| Asia, Australasia & Middle East | (228) |
| Air Astana | (5) |
| Air New Zealand | (4) |
| ANA – All Nippon Airways | (26) |
| Arkia | (4) |
| Cebu Pacific Air | (30) |
| China Southern Airlines | (5) |
| Etihad Airways | (26) |
| Lion Air | (65) |
| Middle East Airlines | (5) |
| Philippine Airlines | (30) |
| Qatar Airways | (14) |
| SriLankan Airlines | (2) |
| TransAsia Airways | (12) |
| Europe | (145) |
| British Airways | (7) |
| Lufthansa | (40) |
| Novair | (3) |
| Pegasus | (18) |
| Swiss | (5) |
| Turkish Airlines (THY) | (72) |
| North/South America | (208) |
| American Airlines | (100) |
| Avianca | (4) |
| Azul | (10) |
| Hawaiian Airlines | (16) |
| JetBlue Airways | (45) |
| LAN Airlines | (9) |
| Spirit Airlines | (10) |
| TAM Linhas Aereas | (6) |
| Volaris | (8) |
| AIRBUS A330-200 | 504 (43) |
| Africa | 33 (3) |
| Air Algerie | 9 |
| Air Mauritius | 2 |
| Air Namibia | 2 |
| Air Seychelles | 2 |
| Arik Air | 2 |
| Egyptair | 7 |
| Libyan Airlines | 2 (1) |
| South African Airways | 6 |
| Tunisair | 1 (2) |
| Asia, Australasia & Middle East | 256 (26) |
| Air China | 30 |
| Airblue | 1 |
| AirCalin | 2 |
| Capital Airlines | 1 |
| China Eastern Airlines | 25 (2) |
| China Eastern Yunnan | 3 |
| China Southern Airlines | 16 |
| Emirates Airline | 19 |
| Etihad Airways | 19 |
| EVA Air | 10 |
| Fiji Airways | 3 |
| Garuda Indonesia | 10 |
| Gulf Air | 6 |

| | |
|--|----------------|
| Hainan Airlines | 9 |
| Hong Kong Airlines | 9 |
| Iraqi Airways | 1 |
| Jet Airways | 4 (5) |
| Jetstar | 3 |
| Kingfisher Airlines | (15) |
| Korean Air | 8 |
| Kuwait Airways | 2 (3) |
| Malaysia Airlines | 4 |
| Middle East Airlines | 4 (1) |
| Oman Air | 4 |
| Qantas | 16 |
| Qatar Airways | 16 |
| Royal Jordanian | 2 |
| Shanghai Airlines | 3 |
| Sichuan Airlines | 3 |
| SriLankan Airlines | 7 |
| Vietnam Airlines | 10 |
| Virgin Australia | 6 |
| Europe | 129 (8) |
| Aer Lingus | 4 |
| Aeroflot Russian Airlines | 5 |
| Air Europa | 12 |
| Air France | 15 |
| Air Greenland | 1 |
| airberlin | 14 |
| Alitalia | 14 |
| Brussels Airlines | 3 |
| Corsair | 2 |
| Edelweiss Air | 1 |
| Hi Fly | 2 |
| Iberia | (8) |
| KLM Royal Dutch Airlines | 12 |
| Orbest | 1 |
| SkyGreece Airlines | 1 |
| TAP Portugal | 14 |
| Thomas Cook Airlines | 6 |
| Thomas Cook Airlines Scandinavia | 1 |
| Turkish Airlines (THY) | 19 |
| XL Airways France | 2 |
| North/South America | 86 (6) |
| Aerolineas Argentinas | 6 (2) |
| Air Caraibes | 1 |
| Air Transat | 8 |
| American Airlines | 15 |
| Avianca | 9 (1) |
| Avianca Brazil | (1) |
| Avianca Peru | 1 |
| Azul | 5 |
| Delta Air Lines | 11 |
| Hawaiian Airlines | 21 (2) |
| TAM Linhas Aereas | 8 |
| TAME | 1 |
| AIRBUS A330-200F | 28 (10) |
| Asia, Australasia & Middle East | 15 (3) |
| Etihad Airways | 4 (1) |
| Hong Kong Airlines | 5 |

| | |
|--|------------------|
| Qatar Airways | 6 (2) |
| Europe | 7 (6) |
| MNG Airlines | 1 (3) |
| Turkish Airlines (THY) | 6 (3) |
| North/South America | 6 (1) |
| Avianca Brazil | 1 |
| Avianca Cargo | 5 (1) |
| AIRBUS A330-300 | 563 (105) |
| Africa | 5 (1) |
| Air Algerie | 1 |
| Egyptair | 4 (1) |
| Asia, Australasia & Middle East | 375 (85) |
| Air China | 19 (4) |
| AirAsia X | 16 (16) |
| Asiana Airlines | 15 |
| Cathay Pacific | 43 |
| Cebu Pacific Air | 6 |
| China Airlines | 24 |
| China Eastern Airlines | 15 |
| China Southern Airlines | 18 (6) |
| Dragonair | 18 |
| Etihad Airways | 6 |
| EVA Air | 3 (2) |
| Fiji Airways | (1) |
| Flynas | 2 |
| Garuda Indonesia | 11 (13) |
| Gulf Air | (6) |
| Hainan Airlines | 9 (5) |
| Hong Kong Airlines | 3 (2) |
| Indonesia AirAsia X | 2 |
| Jet Airways | 4 |
| Korean Air | 20 (1) |
| Lion Air | (3) |
| Malaysia Airlines | 15 |
| Oman Air | 6 |
| Philippine Airlines | 15 |
| Qantas | 10 |
| Qatar Airways | 13 |
| Saudia | 16 (20) |
| Shaheen Air International | 2 |
| Shanghai Airlines | 3 |
| Sichuan Airlines | 4 |
| Singapore Airlines | 31 (2) |
| SriLankan Airlines | 3 (3) |
| Thai AirAsia X | 3 (1) |
| Thai Airways International | 18 |
| TransAsia Airways | 2 |
| Europe | 134 (11) |
| Aer Lingus | 4 |
| Aeroflot Russian Airlines | 17 |
| Air Europa | 2 |
| Brussels Airlines | 5 |
| Corsair | 2 |
| Czech Airlines | 1 |
| Edelweiss Air | 1 |
| Evelop Airlines | 1 (1) |
| Finnair | 8 |



Vietnam Airlines this year became the second A350-900 operator

| | |
|--|---------------|
| Hi Fly | 1 |
| Iberia | 8 |
| Ifly | 2 |
| KLM Royal Dutch Airlines | 5 |
| Lufthansa | 19 |
| SAS | 4 (4) |
| Swiss | 14 (1) |
| Thomas Cook Airlines Scandinavia | 3 |
| Turkish Airlines (THY) | 25 (5) |
| Virgin Atlantic Airways | 10 |
| XL Airways France | 2 |
| North/South America | 49 (8) |
| Air Canada | 8 |
| Air Caraibes | 4 |
| Air Transat | 4 |
| American Airlines | 9 |
| Conviasa | 1 |
| Delta Air Lines | 23 (8) |
| AIRBUS A330-300 | (90) |
| Asia, Australasia & Middle East | (59) |
| AirAsia X | (55) |
| TransAsia Airways | (4) |
| North/South America | (31) |
| Delta Air Lines | (25) |
| Hawaiian Airlines | (6) |
| AIRBUS A340-200 | 3 |
| Africa | 2 |
| Air Leisure | 2 |
| North/South America | 1 |
| Conviasa | 1 |
| AIRBUS A340-300 | 141 |
| Africa | 16 |
| Air Madagascar | 2 |
| Air Mauritius | 6 |
| South African Airways | 8 |
| Asia, Australasia & Middle East | 39 |
| Air Tahiti Nui | 5 |
| Cathay Pacific | 8 |
| China Airlines | 5 |
| Emirates Airline | 4 |
| Iran Aseman Airlines | 1 |
| Kuwait Airways | 4 |
| Mahan Air | 4 |
| Philippine Airlines | 6 |
| SriLankan Airlines | 2 |
| Europe | 78 |
| Air France | 13 |
| Finnair | 7 |
| Hi Fly | 3 |
| Iberia | 7 |
| Lufthansa | 17 |
| SAS | 8 |
| Swiss | 15 |
| TAP Portugal | 4 |
| Turkish Airlines (THY) | 4 |
| North/South America | 8 |
| Aerolineas Argentinas | 7 |
| Surinam Airways | 1 |
| AIRBUS A340-500 | 8 |
| Asia, Australasia & Middle East | 5 |
| Emirates Airline | 1 |
| Etihad Airways | 4 |
| Europe | 3 |
| Azerbaijan Airlines | 2 |
| Hi Fly | 1 |
| AIRBUS A340-600 | 75 |
| Africa | 9 |
| South African Airways | 9 |
| Asia, Australasia & Middle East | 14 |
| Etihad Airways | 7 |
| Mahan Air | 3 |
| Qatar Airways | 4 |
| Europe | 52 |
| Iberia | 17 |
| Lufthansa | 24 |
| Virgin Atlantic Airways | 11 |
| AIRBUS A350-800 | (16) |
| Asia, Australasia & Middle East | (8) |
| Asiana Airlines | (8) |
| Europe | (8) |



The Airbus A340, now no longer in production, has dropped out of the top 10

| | |
|--|------------------|
| Aeroflot Russian Airlines | (8) |
| AIRBUS A350-900 | 5 (548) |
| Africa | (34) |
| Afriqiyah Airways | (10) |
| Air Mauritius | (6) |
| Ethiopian Airlines | (12) |
| Libyan Airlines | (6) |
| Asia, Australasia & Middle East | 5 (302) |
| Air China | (10) |
| AirAsia X | (10) |
| Asiana Airlines | (12) |
| Cathay Pacific | (22) |
| China Airlines | (14) |
| Etihad Airways | (40) |
| Hong Kong Airlines | (15) |
| Japan Airlines | (18) |
| Kuwait Airways | (10) |
| Qatar Airways | 4 (39) |
| Singapore Airlines | (70) |
| SriLankan Airlines | (7) |
| Thai Airways International | (12) |
| Vietnam Airlines | 1 (13) |
| Yemenia | (10) |
| Europe | (120) |
| Aer Lingus | (9) |
| Aeroflot Russian Airlines | (14) |
| Air France | (25) |
| Finnair | (19) |
| Iberia | (8) |
| Lufthansa | (25) |
| SAS | (8) |
| TAP Portugal | (12) |
| North/South America | (92) |
| Air Caraibes | (3) |
| American Airlines | (22) |
| Avianca | (10) |
| Azul | (5) |
| Delta Air Lines | (25) |
| TAM Linhas Aereas | (27) |
| AIRBUS A350-1000 | (164) |
| Asia, Australasia & Middle East | (108) |
| Asiana Airlines | (10) |
| Cathay Pacific | (26) |
| Etihad Airways | (22) |
| Japan Airlines | (13) |
| Qatar Airways | (37) |
| Europe | (18) |
| British Airways | (18) |
| North/South America | (38) |
| Air Caraibes | (3) |
| United Airlines | (35) |
| AIRBUS A380 | 167 (120) |
| Africa | (2) |
| Air Austral | (2) |
| Asia, Australasia & Middle East | 134 (103) |
| Asiana Airlines | 4 (2) |
| China Southern Airlines | 5 |
| Emirates Airline | 64 (76) |
| Etihad Airways | 3 (7) |

| | |
|--|----------------|
| Korean Air | 10 |
| Malaysia Airlines | 6 |
| Qantas | 12 (8) |
| Qatar Airways | 5 (5) |
| Singapore Airlines | 19 (5) |
| Thai Airways International | 6 |
| Europe | 33 (15) |
| Air France | 10 (2) |
| British Airways | 9 (3) |
| Lufthansa | 14 |
| Transaero Airlines | (4) |
| Virgin Atlantic Airways | (6) |
| AIRBUS C212 | 5 |
| North/South America | 5 |
| Bering Air | 1 |
| Ryan Air | 4 |
| ANTONOV AN-3 | 5 |
| Europe | 5 |
| KrasAvia | 1 |
| Polar Airlines | 4 |
| ANTONOV AN-12 | 46 |
| Africa | 5 |
| Goliat Air | 1 |
| Green Flag Aviation | 1 |
| Kata Transportation Company | 1 |
| Sky Guinee Airlines | 1 |
| Transluz Aviation | 1 |
| Asia, Australasia & Middle East | 11 |
| Asia Airways | 2 |
| ATMA | 2 |
| Avialeasing Aviation Company | 1 |
| East Wing | 1 |
| Jayawijaya Dirgantara | 1 |
| Noor Air Company | 2 |
| TAPC Aviatrans | 2 |
| Europe | 30 |
| Air Bridge Cargo Express | 1 |
| Atlantis European Airways | 1 |
| Ayk Avia | 1 |
| Azal Avia Cargo | 1 |
| Cavok Air | 6 |
| Grodno Aviakompania | 1 |
| Kosmos Airlines | 4 |
| Motor Sich Airlines | 2 |
| Ridge Airways | 1 |
| Ruby Star | 2 |
| Shovkoviy Shlyah | 1 |
| Silk Way Airlines | 1 |
| Taron Avia | 2 |
| Ukraine Air Alliance | 6 |
| ANTONOV AN-24 | 115 |
| Africa | 3 |
| Alfa Airlines | 1 |
| Filair | 1 |
| Suhura Airways | 1 |
| Asia, Australasia & Middle East | 24 |
| Air Koryo | 3 |
| Avia Jaynar | 3 |
| East Horizon Airlines | 2 |

| | |
|--|------------|
| Kam Air | 1 |
| Southern Sky Airlines | 15 |
| Europe | 84 |
| Air Urga | 6 |
| ALROSA Air Company | 3 |
| Angara Airlines | 7 |
| Artel Starateley Amur | 2 |
| Buryat Airlines | 4 |
| Chukotavia | 1 |
| IrAero | 9 |
| Izhavia Udmurtia | 3 |
| Khabarovsk Airlines | 5 |
| KrasAvia | 5 |
| Motor Sich Airlines | 3 |
| Polar Airlines | 10 |
| Progress TsSKB Aviakompania | 1 |
| Pskov Avia | 5 |
| Turhan Aviacompany | 20 |
| North/South America | 4 |
| Aerogaviota | 1 |
| Cubana | 3 |
| ANTONOV AN-26 | 142 |
| Africa | 27 |
| Air Kasai | 3 |
| Alfa Airlines | 2 |
| Ben Air | 2 |
| Blue Airlines | 1 |
| Dove Air Services | 1 |
| El Magal Aviation | 1 |
| Filair | 1 |
| Gloria Airways | 1 |
| GR Avia | 1 |
| Green Flag Aviation | 1 |
| Kush Aviation | 1 |
| Libyan Air Cargo | 1 |
| Mango Mat | 1 |
| Mid Airlines | 1 |
| Services Air | 1 |
| South Supreme Airlines | 3 |
| Suhura Airways | 1 |
| Tracep Congo Aviation | 1 |
| Turbot Air Cargo | 1 |
| Vulkan Air | 2 |
| Asia, Australasia & Middle East | 14 |
| Asia Airways | 1 |
| Kam Air | 1 |
| Safat Airlines | 2 |
| Sky Way Air | 1 |
| Southern Sky Airlines | 1 |
| Tajik Air | 1 |
| Trast Aero | 5 |
| True Aviation Bangladesh | 2 |
| Europe | 74 |
| Aim Air | 2 |
| Air BRIGHT | 1 |
| Air Urga | 5 |
| ALROSA Air Company | 1 |
| Angara Airlines | 2 |
| Antonov Airlines | 1 |

| | | | | | | | |
|--|-----------|--|-----------|--|-----------------|---------------------------------------|----------------|
| Artel Starateley Amur | 2 | Airjet Angola | 1 | Yakutia Airlines | 1 | Kalstar Aviation (500) | 1 |
| Bravo Air | 3 | Guicango | 1 | ANTONOV AN-148 | 7 (1) | Nusantara Air Charter (500) | 1 |
| Bright Flight | 2 | Kush Aviation | 1 | Asia, Australasia & Middle East | 2 | Oman Air (500) | 2 |
| Chukotavia | 3 | South Supreme Airlines | 1 | Air Koryo | 2 | Pakistan International Airlines (500) | 6 |
| CityLine Hungary | 1 | Tarco Air | 1 | Europe | 5 (1) | Pelita Air Service (500) | 1 |
| EXIN | 3 | Valan International Cargo (South Africa) | 2 | Angara Airlines | 5 | Toll Priority (300F) | 2 |
| Genex | 2 | Asia, Australasia & Middle East | 2 | Rossiya Special Flight Detachment | (1) | TransNusa Air Services (600) | 1 |
| Grodno Aviakompania | 1 | AirMark Asia (Singapore) | 1 | ANTONOV AN-158 | 6 | Trigana Air (300) | 6 |
| IrAero | 8 | Trast Aero | 1 | North/South America | 6 | Villa Air (500) | 1 |
| Khabarovsk Airlines | 4 | Europe | 5 | Cubana | 6 | Europe | 67 (3) |
| Kostroma Air Enterprise | 3 | Ayk Avia | 2 | ANTONOV AN-178 | (10) | Aerotranscargo (300F) | 1 |
| KrasAvia | 4 | KrasAvia | 2 | Europe | (10) | ASL Airlines Ireland (300F) | 7 |
| Meridian | 2 | Skiva Air | 1 | Silk Way West Airlines | (10) | Astra Airlines (300) | 2 |
| Petropavlovsk-Kamchatsky Air Enterprise | 3 | North/South America | 11 | ANTONOV AN-225 | 1 | Aurigny Air Services (500) | 1 |
| Polar Airlines | 4 | Aer Caribe | 3 | Europe | 1 | Aviavisa (300F) | 1 |
| Progress TsSKB Aviakompania | 2 | Amazon Sky | 1 | Antonov Airlines | 1 | Blue Islands (300) | 3 |
| Pskov Avia | 2 | ATSA – Aero Transporte SA | 4 | ATR 42 | 250 (23) | Blue Islands (500) | 1 |
| RAF-AVIA | 4 | SADELCA | 1 | Africa | 24 (2) | Canary Fly (300) | 1 |
| Skiva Air | 1 | Servicaribe Express SA | 2 | Air Botswana (500) | 3 | Czech Airlines (500) | 2 |
| Sky Wind | 1 | ANTONOV AN-38 | 3 | Air Madagascar (500) | 1 | DAT – Danish Air Transport (300) | 2 |
| South Airlines (Armenia) | 2 | Europe | 3 | CEIBA Intercontinental (500) | 1 | DAT – Danish Air Transport (500) | 1 |
| Turkhan Aviakompania | 3 | ALROSA Air Company | 1 | Overland Airways (300) | 4 | Denim Air (300) | 1 |
| Valan International Cargo Charter | 2 | Vostok Airlines | 2 | Precision Air (500) | 1 | DOT LT (300F) | 1 |
| North/South America | 27 | ANTONOV AN-72/74 | 27 | Precision Air (600) | 2 | DOT LT (500) | 1 |
| Aer Caribe | 2 | Africa | 2 | Royal Air Maroc Express (600) | (2) | Farnair Switzerland (300) | 1 |
| Aerogaviota | 12 | Green Flag Aviation | 2 | Solenta Aviation (300) | 1 | HOP! (500) | 13 |
| Amazon Sky | 1 | Asia, Australasia & Middle East | 4 | Solenta Aviation (300F) | 4 | Lease Fly (300) | 3 |
| ATSA – Aero Transporte SA | 1 | Asia Airways | 1 | Solenta Aviation (500) | 3 | Melilla Airlines (300) | 1 |
| Cubana | 4 | Pouya Air | 2 | TACV – Cabo Verde Airlines (500) | 1 | Nordavia Regional Airlines (500) | 1 |
| SADELCA | 1 | Yas Air | 1 | Tiko Air (300) | 1 | PGA – Portugal Airlines (600) | 2 |
| SELVA Colombia | 3 | Europe | 21 | Tropical Air (300) | 2 | Sky Express (300) | 2 |
| Servicaribe Express SA | 1 | Aerom | 1 | Asia, Australasia & Middle East | 46 (11) | Stobart Air (300) | 2 |
| Solar Cargo | 2 | Antonov Airlines | 1 | Air Bagan (300) | 2 | Swiftair (300F) | 6 |
| ANTONOV AN-28 | 16 | Ayk Avia | 2 | Air Caledonie (500) | 1 | Taimyr Air – NordStar (500) | 4 |
| Africa | 5 | Cavok Air | 1 | Air India Regional (300) | 4 | Taimyr Air – NordStar (600) | (3) |
| El Dinder Aviation | 2 | FGUAP MCHS Rossii | 2 | Air Tahiti (600) | 2 (1) | TAROM (500) | 7 |
| Tracep Congo Aviation | 3 | Motor Sich Airlines | 1 | Amakusa Airlines (600) | (1) | North/South America | 113 (7) |
| Asia, Australasia & Middle East | 2 | Shar ink | 2 | Buddha Air (300) | 3 | Aerocaribbean (300) | 3 |
| Tajik Air | 2 | Skiva Air | 1 | Cebgo (500) | 1 | Aerogaviota (500) | 4 |
| Europe | 9 | South Airlines (Armenia) | 3 | Druk Air (500) | 1 | Aeromar Airlines (300) | 4 |
| Murmansk Aviation Enterprise | 3 | Uktus Avia Company | 1 | Fiji Link (600) | 1 | Aeromar Airlines (500) | 10 |
| Petropavlovsk-Kamchatsky Air Enterprise | 1 | UTair Cargo | 6 | FMI Air Charter (300) | 1 | Aeroparaguana (300) | 1 |
| Skiva Air | 2 | ANTONOV AN-124 | 18 | Gatari Air Service (500) | 1 | Air Antilles Express (500) | 3 |
| Vostok Airlines | 3 | Europe | 18 | Global Airlines (600) | (1) | Air Antilles Express (600) | 1 |
| ANTONOV AN-30 | 1 | Antonov Airlines | 7 | Indonesia Air Transport (300) | 1 | Air Saint-Pierre (500) | 1 |
| Africa | 1 | Maximus Airlines | 1 | Indonesia Air Transport (500) | 2 | Avianca Honduras (300) | 2 |
| Aero-Fret Business | 1 | Volga-Dnepr Airlines | 10 | Island Transvoyaer (500) | 1 | Azul (500) | 4 |
| ANTONOV AN-32 | 26 | ANTONOV AN-140 | 2 | Japan Air Commuter (600) | (8) | Bahamasair (600) | (3) |
| Africa | 8 | Europe | 2 | Jhonlin Air Transport (600) | 1 | Calm Air (300) | 7 |
| Air Nave | 1 | Motor Sich Airlines | 1 | Kalstar Aviation (300) | 3 | Cape Air (300) | 2 |



The fleet of ATR 72s has grown by over 11% from last year

| | | | | | | | |
|--|------------------|---------------------------------------|-----------------|--|-----------|--|------------|
| Conviasa (400) | 1 | Mann Yadanarpon Airlines (600) | 2 | Aerocaribbean (210) | 4 | Atlantic Airlines | 11 |
| DHL de Guatemala (300F) | 1 | MASWings (500) | 10 | Aeromar Airlines (600) | 2 | Nextjet | 5 |
| DHL Ecuador (300F) | 1 | MASWings (600) | 4 (6) | Air Caraibes (500) | 3 | West Air Europe | 20 |
| Easyfly (500) | 3 | Mount Cook Airline (500) | 11 | Air Caraibes (600) | (4) | BAE JETSTREAM 31 | 110 |
| Empire Airlines (300F) | 9 | Mount Cook Airline (600) | 7 (7) | Avianca (600) | 9 | Africa | 4 |
| First Air (300) | 9 | Myanmar National Airlines (210) | 2 | Avianca Honduras (600) | 2 | Proflight Zambia | 4 |
| La Costena (300) | 2 | Myanmar National Airlines (500) | 1 | Aviateca (600) | 4 | Asia, Australasia & Middle East | 6 |
| LIAT (600) | 5 | Myanmar National Airlines (600) | (6) | Azul (500) | 7 | Airwork (NZ) | 2 |
| MAP Linhas Aereas (300) | 2 | Nusantara Air Charter (500) | 1 | Azul (500F) | 1 | Pelican Airlines | 2 |
| Mountain Air Cargo (300F) | 11 | Pakistan International Airlines (500) | 5 | Azul (600) | 45 | Real Tonga | 2 |
| Ohana by Hawaiian (500) | 3 | Pelita Air Service (500) | 2 | Bahamasair (600) | (2) | Europe | 25 |
| Pascan Aviation (300) | 3 | Syrianair (500) | 2 | Calm Air (200) | 2 | AIS Airlines | 7 |
| SATENA (500) | 8 | TransAsia Airways (500) | 4 | Calm Air (200F) | 2 | Avies | 9 |
| SATENA (600) | 1 (4) | TransAsia Airways (600) | 5 (3) | Caribbean Airlines (600) | 5 | DirektFlyg | 1 |
| TAME xpress (500) | 3 | Trigana Air (200) | 3 | Conviasa (210) | 1 | Eagle Air Iceland | 3 |
| Linhas Aereas (500) | 3 | TruJet (500) | 2 | Empire Airlines (210F) | 7 | Linksair | 2 |
| Vensecar Internacional (300F) | 1 | UNI Air (600) | 13 | First Air (210F) | 1 | Sky Net Airline | 1 |
| West Wind Aviation (300) | 5 | United Airways (210) | 1 | LIAT (600) | 4 | Sun-Air of Scandinavia | 2 |
| ATR 72 | 644 (194) | VASCO (500) | 2 | MAP Linhas Aereas (200) | 3 | North/South America | 75 |
| Africa | 47 (5) | Vietnam Airlines (500) | 12 | Morningstar Air Express (200F) | 1 | Ad Maiora Líneas Aéreas | 1 |
| Air Algerie (500) | 12 | Villa Air (500) | 2 | Mountain Air Cargo (200F) | 2 | ADA – Aerolínea de Antioquia | 7 |
| Air Algerie (600) | 2 (1) | Villa Air (600) | 1 (1) | Mountain Air Cargo (210F) | 6 | Aeroandinas | 1 |
| Air Austral (500) | 2 | Virgin Australia (500) | 6 | Passaredo Transportes Aereos (500) | 9 | Aerolineas Mas | 2 |
| Air Botswana (500) | 1 | Virgin Australia (600) | 8 (5) | Passaredo Transportes Aereos (600) | 4 (10) | Aerolineas SOSA | 2 |
| Air Madagascar (500) | 2 | Wings Air (500) | 20 | SATENA (500) | 2 | AeroPacifico | 1 |
| Air Madagascar (600) | 2 (3) | Wings Air (600) | 20 (8) | Summit Air Charters (200F) | 1 | Briko Air Services | 1 |
| Air Mauritius (500) | 2 | Yangon Airways (210) | 2 | Synergy Aerospace (600) | (10) | Integra Air | 3 |
| CEIBA Intercontinental (500) | 2 | Yangon Airways (500) | 1 | BAE (HS) 748 | 16 | Kavok Airlines | 1 |
| Colombe Airlines (200) | 1 | Europe | 176 (23) | Africa | 4 | Macair Jet | 3 |
| Ewa Air (500) | 1 | Air Corsica (500) | 4 | CHC Stellavia | 1 | Northwestern Air | 9 |
| Overland Airways (200) | 2 | Air Europa (200) | 2 | Planes For Africa | 2 | Pascan Aviation | 10 |
| Precision Air (500) | 5 | Air Europa (500) | 4 | Safe Air Company | 1 | SARPA | 6 |
| Precision Air (600) | (1) | Air Nostrum (600) | 5 | Asia, Australasia & Middle East | 2 | Starlink Aviation | 3 |
| Royal Air Maroc Express (600) | 5 | Air Serbia (200) | 3 | Bismillah Airlines | 2 | Sundance Air (Venezuela) | 5 |
| Solenta Aviation (200F) | 1 | Air Serbia (500) | 3 | North/South America | 10 | Sunrise Airways | 3 |
| Solenta Aviation (210) | 2 | Alitalia (500) | 4 | Air Creebec | 2 | Tortug Air | 2 |
| TACV - Cabo Verde Airlines (500) | 2 | Alsie Express (500) | 2 | Air Inuit | 1 | Transmandu – Transportes Aereos Manduca | 5 |
| Tunisair Express (200) | 1 | ASL Airlines Ireland (200F) | 10 | Air North | 3 | West Wind Aviation | 3 |
| Tunisair Express (500) | 2 | ASL Airlines Ireland (210F) | 1 | Calm Air | 1 | BAE JETSTREAM 41 | 52 |
| Asia, Australasia & Middle East | 289 (140) | Astra Airlines (200) | 1 | Wasaya Airways | 3 | Africa | 13 |
| Air Bagan (210) | 1 | Aurigny Air Services (200) | 1 | BAE 146 | 59 | Airjet Angola | 2 |
| Air Bagan (500) | 1 | Aurigny Air Services (500) | 2 | Africa | 6 | Airlink | 8 |
| Air Caledonie (500) | 3 | Binter Canarias (200) | 2 | Air Libya (200) | 1 | Proflight Zambia | 3 |
| Air Caledonie (600) | (4) | Binter Canarias (500) | 11 | Cronos Airlines (200) | 1 | Asia, Australasia & Middle East | 9 |
| Air India Regional (600) | 4 (1) | Binter Canarias (600) | (12) | Cronos Airlines (300) | 1 | Air Republiq Airlines | 1 |
| Air KBZ (500) | 5 | Blue Islands (500) | 1 | Daallo Airlines (200) | 1 | Eastern Skyjets | 1 |
| Air KBZ (600) | 4 | Blue Panorama Airlines (200) | 1 | Starbow (300) | 2 | Yeti Airlines | 7 |
| Air Niugini (200F) | 1 | Blue1 (500) | 1 | Asia, Australasia & Middle East | 26 | Europe | 18 |
| Air Pegasus (500) | 1 | Braathens Regional (500) | 4 | Avia Traffic Company (200) | 1 | Eastern Airways | 16 |
| Air Tahiti (500) | 6 | Braathens Regional (600) | (5) | Aviastar Mandiri (200) | 2 | Sky Express | 2 |
| Air Tahiti (600) | 1 (5) | Canair (500) | 5 | Mahan Air (300) | 9 | North/South America | 12 |
| Air Vanuatu (500) | 2 | Canary Fly (200) | 2 | National Jet Express (100) | 2 | Easyfly | 12 |
| Airlines PNG (600 Combi) | (6) | CityJet (200) | 1 | National Jet Express (100QT) | 1 | BAE SYSTEMS AVRO RJ | 101 |
| APEX Airlines (600) | 1 | Czech Airlines (210) | 1 | National Jet Express (200) | 2 | Africa | 15 |
| Arkia (500) | 5 | Czech Airlines (500) | 3 | National Jet Express (300) | 2 | Air Annobon (RJ85) | 1 |
| Asian Wings Airways (500) | 3 | DAT – Danish Air Transport (200) | 5 | National Jet Express (300QT) | 3 | Air Botswana (RJ85) | 2 |
| Bangkok Airways (500) | 8 | DAT – Danish Air Transport (210) | 1 | Nusantara Air Charter (200) | 1 | Airlink (RJ85) | 12 |
| Bangkok Airways (600) | 2 (7) | DOT LT (200) | 1 | Skyforce Aviation (200) | 1 | Asia, Australasia & Middle East | 17 |
| Buddha Air (500) | 3 | Farnair Switzerland (200F) | 12 | Skyjet Airlines (100) | 1 | Anugrah Mandiri Waleis (RJ100) | 1 |
| Cambodia Angkor Air (500) | 2 | HOP! (500) | 10 | Tez Jet Airlines (200) | 1 | Mahan Air (RJ100) | 4 |
| Cebgo (600) | (16) | HOP! (600) | 2 (1) | Europe | 15 | Mahan Air (RJ85) | 2 |
| Cebu Pacific Air (500) | 8 | InterSky (600) | 2 | Astra Airlines (300) | 1 | National Jet Express (RJ100) | 5 |
| Dimonim Air (200) | 1 | Mistral Air (210F) | 1 | Bulgaria Air (200) | 1 | National Jet Express (RJ85) | 1 |
| Fiji Link (600) | 2 | Mistral Air (500) | 4 | Pan Air (200QT) | 2 | Qeshm Airlines (RJ100) | 2 |
| FireFly (500) | 12 | Nordic Regional Airlines (500) | 12 | Pan Air (300QT) | 6 | Qeshm Airlines (RJ85) | 1 |
| FireFly (600) | 6 (4) | Nordic Regional Airlines (600) | (5) | TNT Airways (300QT) | 2 | Taban Air (RJ85) | 1 |
| Garuda Indonesia (600) | 9 (20) | SAS (500) | 4 | WDL (200) | 2 | Europe | 61 |
| Golden Myanmar Airlines (600) | 2 | SAS (600) | 8 | WDL (300) | 1 | Brussels Airlines (RJ100) | 12 |
| Iran Aseman Airlines (210) | 1 | Sprint Air (200F) | 1 | North/South America | 12 | CityJet (RJ85) | 17 |
| Iran Aseman Airlines (500) | 2 | Stobart Air (200) | 1 | Aerovias DAP (200) | 2 | Ellinair (RJ85) | 2 |
| Isair (500) | 2 | Stobart Air (500) | 2 | Star Peru (100) | 2 | Malmö Aviation (RJ100) | 10 |
| Jet Airways (500) | 15 | Stobart Air (600) | 8 | Star Peru (200) | 3 | Malmö Aviation (RJ85) | 2 |
| Jet Airways (600) | 3 | Swiftair (200) | 2 | Star Peru (200QT) | 1 | Swiss Global Air Lines (RJ100) | 18 |
| Kalstar Aviation (500) | 2 | Swiftair (200F) | 3 | Star Peru (300) | 2 | North/South America | 8 |
| Kalstar Aviation (600) | 2 (1) | Swiftair (210) | 1 | TAM – Transporte Aereo Militar (200) | 2 | Aerovias DAP (RJ85) | 1 |
| Kan Air (500) | 2 | Swiftair (210F) | 3 | BAE ATP | 38 | Eco Jet (RJ85) | 3 |
| Lao Airlines (500) | 4 | Swiftair (500) | 2 | Asia, Australasia & Middle East | 2 | First Air (RJ85) | 1 |
| Lao Airlines (600) | 3 | TAROM (500) | 2 | Deraya Air Taxi | 2 | North Cariboo Air (RJ100) | 2 |
| Lion Air (600) | (40) | UTair (500) | 15 | Europe | 36 | Summit Air Charters (RJ85) | 1 |
| Malindo Air (600) | 11 | North/South America | 132 (26) | | | | |

| | | | | | | | |
|--|------------|--|----------------|--|--------------|--|------------|
| BEECHCRAFT 1900C | 120 | Bering Air | 2 | Africa | (28) | Air Inuit (C) | 1 |
| Africa | 10 | Central Mountain Air | 12 | Comair (South Africa) | (8) | Air Inuit (QC) | 1 |
| Air Katanga | 1 | EVAS Air Charters | 9 | Ethiopian Airlines | (20) | Air North (C) | 1 |
| Air Traffic Nairobi | 1 | Evergreen Helicopters of Alaska | 1 | Asia, Australasia & Middle East | (239) | Aloha Air Cargo (C) | 1 |
| Air Tropiques | 1 | Great Lakes Airlines | 28 | flydubai | (75) | Aloha Air Cargo (QC) | 1 |
| ALS Limited | 4 | Kenn Borek Air | 2 | Garuda Indonesia | (50) | Ameristar Charters | 2 |
| Eagle Air | 1 | Maverick Airlines | 3 | Myanmar National Airlines | (4) | ARjet Airlines | 1 |
| Federal Air | 1 | North Cariboo Air | 7 | Nok Air | (8) | Avior Airlines | 4 |
| Fly-SAX | 1 | North Wright Airways | 1 | Okay Airways | (6) | Canadian North | 1 |
| Asia, Australasia & Middle East | 2 | Northern Thunderbird Air | 1 | SilkAir | (31) | Canadian North (C) | 4 |
| Simrik Airlines | 2 | Osprey Wings | 2 | SpiceJet | (42) | Conviasa | 1 |
| Europe | 6 | Ravn Alaska | 3 | Virgin Australia | (23) | EasySky | 2 |
| Atlantique Air Assistance | 1 | SEARCA Colombia | 16 | Europe | (358) | First Air | 2 |
| Chalair Aviation | 1 | Sky Bahamas | 1 | Icelandair | (9) | First Air (C) | 2 |
| Serair Transworld Press | 4 | Sky Jet MG Inc | 1 | Monarch Airlines | (30) | First Air (QC) | 1 |
| North/South America | 102 | TAC – Transporte Aéreo De Colombia | 2 | Norwegian | (100) | Global Air | 2 |
| ACE Air Cargo | 7 | Transwest Air | 1 | Ryanair (Max 200) | (100) | Magnicharters | 1 |
| Air Sunshine | 1 | Wasaya Airways | 7 | SunExpress | (15) | Nolinor Aviation (C) | 3 |
| Alpine Air Express | 16 | West Wind Aviation | 3 | Thomson Airways | (40) | Nolinor Aviation (QC) | 1 |
| Ameriflight | 25 | BEECHCRAFT B99 | 108 | Travel Service Airlines | (9) | Northern Air Cargo (F) | 3 |
| Caicos Express Airways | 1 | North/South America | 108 | Turkish Airlines (THY) | (55) | Peruvian Airlines | 3 |
| Corporate Air | 1 | Alpine Air Express | 11 | North/South America | (427) | Rutaca | 6 |
| EG&G Special Projects | 2 | Ameriflight | 56 | Air Canada | (33) | Sierra Pacific Airlines | 2 |
| Freight Runners Express | 3 | Bemidji Aviation | 11 | Alaska Airlines | (20) | TAM – Transporte Aereo Militar | 5 |
| Frontier Flying Service | 4 | Courtesy Air | 1 | American Airlines | (100) | TransAir (C) | 2 |
| Hageland Aviation Services | 3 | Freight Runners Express | 10 | GOL | (60) | TransAir (F) | 2 |
| Keewatin Air | 2 | Hummingbird Air | 3 | Southwest Airlines | (170) | Venezolana | 3 |
| Northern Thunderbird Air | 3 | InterCaribbean Airways | 2 | Sunwing Airlines | (4) | BOEING 737-300 | 483 |
| Pacific Coastal Airlines | 7 | North Wright Airways | 2 | WestJet | (40) | Africa | 32 |
| Pineapple Air | 2 | Northwestern Air | 1 | BOEING 737 MAX 9 | (182) | Air Madagascar | 1 |
| Pronto Airways | 4 | Perimeter | 1 | Europe | (37) | Air Peace | 1 |
| SAEREO | 1 | Wiggins Airways | 10 | Icelandair | (7) | Azman Air | 2 |
| SAP | 1 | BOEING 717-200 | 136 | Thomson Airways | (7) | Badr Airlines | 1 |
| Skylink Express | 9 | Asia, Australasia & Middle East | 23 | TUI Travel PLC | (13) | Comair (South Africa) | 5 |
| Southern Air Charter | 1 | QantasLink | 18 | Turkish Airlines (THY) | (10) | Jambo Jet | 3 |
| Suburban Air Freight | 7 | Turkmenistan Airlines | 5 | North/South America | (145) | Jubba Airways | 1 |
| VI Airlink | 1 | Europe | 24 | Air Canada | (28) | Karinou Airlines | 1 |
| West Wind Aviation | 1 | Blue1 | 5 | Alaska Airlines | (17) | Kenya Airways | 1 |
| BEECHCRAFT 1900D | 221 | Volotea | 19 | United Airlines | (100) | Kenya Airways (SF) | 2 |
| Africa | 52 | North/South America | 89 | BOEING 737 MAX-SERIES TBD | (323) | Korongo Airlines | 1 |
| Air Express Algeria | 3 | Delta Air Lines | 71 | Asia, Australasia & Middle East | (201) | Linhas Aéreas de Moçambique | 1 |
| Air Traffic Nairobi | 1 | Hawaiian Airlines | 18 | Lion Air | (201) | Mango | 1 |
| ALS Limited | 3 | BOEING 727-100 | 3 | Europe | (1) | Royal Air Maroc (SF) | 1 |
| Blue Bird Aviation | 1 | Africa | 1 | Enter Air | (1) | Safair (SF) | 1 |
| Cabo Verde Express | 1 | Gomair | 1 | North/South America | (121) | Skywise | 1 |
| CemAir | 6 | North/South America | 2 | Aeromexico | (60) | South African Airways (SF) | 2 |
| DANA Air | 2 | Lineas Aéreas Suramericanas | 2 | Copa Airlines | (61) | South Supreme Airlines | 1 |
| DHL Aviation | 2 | BOEING 727-200 | 66 | BOEING 737-200 | 99 | Tarco Air | 1 |
| Elysian Airlines | 1 | Africa | 7 | Africa | 24 | Trans Air Congo | 4 |
| Federal Air | 1 | Emirate Touch Aviation Services (F) | 1 | Africa Charter Airline (C) | 1 | Asia, Australasia & Middle East | 136 |
| Massawa Airways | 2 | Safe Air Company (F) | 1 | Africa Charter Airline (F) | 2 | Air Indus | 1 |
| Nouvelle Air Affaires Gabon | 1 | Services Air (F) | 5 | Air Zimbabwe | 1 | Air Kyrgyzstan | 1 |
| Overland Airways | 2 | Asia, Australasia & Middle East | 10 | Allegiance Airways – Gabon | 1 | Air New Zealand | 2 |
| Solenta Aviation | 10 | Iran Aseman Airlines | 3 | Blue Sky Airways | 1 | Airwork (NZ) (SF) | 2 |
| SonAir | 11 | Iran Aseman Airlines (F) | 1 | CAA – Compagnie Africaine d'Aviation | 1 | Avia Traffic Company | 4 |
| Star Aviation | 2 | Majestic Air Cargo (F) | 1 | Canadian Airways Congo | 2 | Cardig Air (SF) | 4 |
| Tassili Airlines | 3 | Neptune Air (F) | 1 | Gomair | 1 | China Eastern Airlines | 5 |
| Asia, Australasia & Middle East | 25 | Raya Airways (F) | 3 | Interair | 1 | China Eastern Yunnan | 9 |
| Air Link | 1 | SKA Air & Logistics (SkyLink Arabia) (F) | 1 | ITAB – International Trans Air Business (QC) | 1 | China Postal Airlines (QC) | 2 |
| Air South Charter | 3 | North/South America | 49 | JedAir (C) | 1 | China Postal Airlines (SF) | 12 |
| Buddha Air | 3 | Aerosucre Colombia (F) | 3 | Jubba Airways | 1 | Donghai Airlines (SF) | 5 |
| Eagle Airways | 12 | Air Class Lineas Aéreas (F) | 1 | Karinou Airlines | 1 | Express Air | 5 |
| EVA Air | 1 | Amerjet International (F) | 5 | Niger Airlines | 1 | Express Freighters Australia (SF) | 4 |
| Korea Express Air | 2 | Asia Pacific Airlines (F) | 3 | Star Air | 3 | Global Jet Airlines | 2 |
| Myanmar National Airlines | 2 | Cargojet Airways (F) | 6 | TAAG Angola Airlines | 2 | Jordan Aviation | 4 |
| Pol Air | 1 | Gulf & Caribbean Cargo (F) | 3 | Trans Air Congo | 3 | Kalstar Aviation | 1 |
| Europe | 21 | Kalitta Charters II (F) | 6 | Asia, Australasia & Middle East | 12 | Loong Air (SF) | 3 |
| Chalair Aviation | 6 | KF Aerospace (F) | 3 | AIRFAST Indonesia | 1 | My Indo Airlines (SF) | 1 |
| Farnair Hungary | 1 | Lineas Aéreas Suramericanas (F) | 5 | Airstream Aviation (C) | 1 | Nauru Airlines | 4 |
| Hex'Air | 2 | PanAir Cargo (F) | 1 | Express Air | 2 | Nauru Airlines (SF) | 1 |
| Medavia | 2 | Rio Linhas Aéreas (F) | 5 | Iraqi Airways | 1 | Neptune Air (SF) | 1 |
| Twin Jet | 9 | SELVA Colombia (F) | 1 | Jayawijaya Dirgantara (C) | 1 | Okay Airways (SF) | 1 |
| Zimex Aviation | 1 | Linhas Aéreas (F) | 6 | Jayawijaya Dirgantara (QC) | 1 | Orient Thai Airlines | 7 |
| North/South America | 123 | USA Jet Airlines (F) | 1 | Sear International (C) | 1 | SCAT | 2 |
| Aeroeste | 1 | BOEING 737 MAX 7 | (60) | Sky Capital Airlines (F) | 1 | SF Airlines (SF) | 6 |
| Air Creebec | 1 | North/South America | (60) | Trigana Air | 3 | Siam Air | 2 |
| Air Georgian | 14 | Jetlines | (5) | North/South America | 63 | Solitaire Air | 1 |
| Air Labrador | 2 | Southwest Airlines | (30) | AeroDesierto | 1 | Somon Air | 2 |
| Alpine Air Express | 1 | WestJet | (25) | Aerosucre Colombia (F) | 2 | Sriwijaya Air | 11 |
| ATSA – Aero Transporte SA | 2 | BOEING 737 MAX 8 | (1,052) | Aerovias DAP | 2 | Sunkar Air | 1 |

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|-------------------------------------|------------|
| Tajik Air | 1 |
| Texel Air (SF) | 2 |
| Thai Express Cargo (QC) | 1 |
| Toll Priority (SF) | 2 |
| Tri MG Airlines (SF) | 2 |
| Trigana Air (SF) | 3 |
| Wings of Lebanon | 2 |
| Yangtze River Express (QC) | 4 |
| Yangtze River Express (SF) | 13 |
| Europe | 131 |
| Air Bucharest | 1 |
| Air Moldova | 1 |
| Air Serbia | 1 |
| airBaltic | 7 |
| Arkefly | 1 |
| ASL Airlines Ireland | 1 |
| Atlantic Airlines (SF) | 6 |
| Aviolet | 3 |
| Belavia | 8 |
| Blue Air | 2 |
| Bluebird Cargo (SF) | 3 |
| Blu-Express | 3 |
| Cargo Air (SF) | 3 |
| Corendon Airlines | 1 |
| Ellinair | 2 |
| Europe Airpost (QC) | 6 |
| Europe Airpost (SF) | 3 |
| Hermes Airlines | 1 |
| Jet Time | 4 |
| Jet Time (QC) | 1 |
| Jet Time (SF) | 1 |
| Jet2 | 20 |
| Jet2 (QC) | 8 |
| Jet2 (SF) | 1 |
| Lufthansa | 9 |
| Meridiana | 2 |
| Mistral Air (QC) | 4 |
| Norwegian | 3 |
| Small Planet Airlines (Lithuania) | 2 |
| Swiftair (SF) | 5 |
| Taimyr Air – NordStar | 1 |
| TAROM | 4 |
| Titan Airways (QC) | 3 |
| TNT Airways (SF) | 3 |
| Transaero Airlines | 3 |
| Ukraine International Airlines | 2 |
| Ukraine International Airlines (SF) | 1 |
| YanAir | 1 |
| North/South America | 184 |
| Air Panama (QC) | 1 |
| Aloha Air Cargo (SF) | 2 |
| Boliviana de Aviacion | 10 |
| Canadian North | 9 |
| Canadian North (QC) | 1 |
| Cayman Airways | 4 |
| Estafeta Carga Aerea (SF) | 4 |
| Magnicharters | 7 |
| Northern Air Cargo (SF) | 2 |
| One Airlines | 1 |
| Peruvian Airlines | 3 |
| Peruvian Airlines (QC) | 2 |
| Rutaca | 1 |
| Sideral Air Cargo (SF) | 1 |
| Southwest Airlines | 118 |
| Surinam Airways | 3 |
| TAM – Transporte Aereo Militar | 1 |
| Vision Airlines | 1 |
| VivaAerobus | 13 |
| BOEING 737-400 | 259 |
| Africa | 34 |
| AeroContractors | 7 |
| Air Ghana (SF) | 1 |
| Allied Air Cargo (SF) | 3 |
| Buraq Air | 1 |
| Comair (South Africa) | 10 |
| Jubba Airways | 1 |
| Kulula | 2 |
| Med-View Airline | 2 |
| Safair | 4 |
| Safair (Combi) | 2 |



GOL is one of the bigger Boeing 737 operators with 98 in service

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| Tarco Air | 1 |
| Asia, Australasia & Middle East | 64 |
| Air Busan | 4 |
| Air Incheon (SF) | 2 |
| AlNaser Airlines | 1 |
| Ariana Afghan Airlines | 2 |
| China Postal Airlines (SF) | 8 |
| City Airways | 2 |
| Gading Sari Aviation Services (SF) | 2 |
| Japan TransOcean Air | 11 |
| Jordan Aviation | 2 |
| K-Mile Air (SF) | 1 |
| NewGen Airways | 3 |
| Orient Thai Airlines | 2 |
| Pegasus Asia | 1 |
| Royal Falcon Airlines | 1 |
| SF Airlines (SF) | 3 |
| Shaheen Air International | 5 |
| Sriwijaya Air | 5 |
| Tajik Air | 2 |
| Thai Airways International | 1 |
| Toll Priority (SF) | 1 |
| Trigana Air | 1 |
| Union Express Charter Airline | 1 |
| Yangtze River Express (SF) | 3 |
| Europe | 98 |
| Air Bridge Cargo Express (SF) | 3 |
| Air Horizont | 1 |
| AirExplore | 1 |
| Alba Star | 4 |
| Arkefly | 1 |
| ASL Airlines Ireland (SF) | 2 |
| Atlantic Airlines (SF) | 2 |
| Blue Air | 10 |
| Blue Panorama Airlines | 1 |
| Bluebird Airways | 1 |
| Bluebird Cargo (SF) | 2 |
| Blu-Express | 1 |
| British Airways | 3 |
| Cargo Air (SF) | 2 |
| Enter Air | 8 |
| Europe Airpost (SF) | 3 |
| Farnair Hungary (SF) | 2 |
| Go2sky | 3 |
| Grand Cru Airlines | 1 |
| Jet Time (SF) | 3 |
| LOT Polish Airlines | 3 |
| Mistral Air | 1 |
| Norwegian | 1 |
| Ryanair | 1 |
| Swiftair (SF) | 4 |
| Tailwind Airlines | 5 |
| TNT Airways (SF) | 14 |
| Transaero Airlines | 5 |
| UTair | 6 |
| Yamal Airlines | 3 |
| YanAir | 1 |
| North/South America | 63 |

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|--|------------|
| Air North | 1 |
| Alaska Airlines | 21 |
| Alaska Airlines (Combi) | 5 |
| Alaska Airlines (SF) | 1 |
| Avior Airlines | 3 |
| Colt Cargo (SF) | 2 |
| First Air | 1 |
| First Air (Combi) | 2 |
| Flair Airlines | 5 |
| Kalitta Charters II (SF) | 1 |
| Miami Air International | 2 |
| Peruvian Airlines | 1 |
| Rio Linhas Aereas (SF) | 1 |
| Sideral Air Cargo (SF) | 2 |
| Sky King | 1 |
| Southern Air (SF) | 4 |
| Vensecar Internacional (SF) | 2 |
| Vision Airlines | 2 |
| Xtra Airways | 6 |
| BOEING 737-500 | 192 |
| Africa | 25 |
| AeroContractors | 6 |
| Air Peace | 4 |
| Alexandria Airlines | 1 |
| Aviator Airlines | 1 |
| Badr Airlines | 2 |
| Egyptair | 2 |
| FlyAfrica.com | 2 |
| Linhas Aereas de Mocambique | 1 |
| Mauritania Airlines International | 2 |
| Med-View Airline | 1 |
| Skywise | 1 |
| Tarco Air | 1 |
| United Nigeria | 1 |
| Asia, Australasia & Middle East | 51 |
| Air Busan | 1 |
| Air Do | 2 |
| Air Kyrgyzstan | 1 |
| ANA Wings | 18 |
| Citilink | 3 |
| Express Air | 1 |
| Garuda Indonesia | 1 |
| Kalstar Aviation | 2 |
| Kam Air | 1 |
| Nam Air | 4 |
| New Jatayu Air | 1 |
| SCAT | 3 |
| Sriwijaya Air | 13 |
| Europe | 91 |
| Air Méditerranée | 2 |
| airBaltic | 5 |
| Airzena – Georgian Airways | 1 |
| Aurora | 3 |
| Belavia | 6 |
| Blue Air | 1 |
| Blu-Express | 1 |
| Bravo Air | 1 |
| Hermes Airlines | 2 |

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|--|-------------------|
| Lufthansa | 11 |
| Nordavia – Regional Airlines | 9 |
| Transaero Airlines | 13 |
| Ukraine International Airlines | 4 |
| UTair | 31 |
| Yamal Airlines | 1 |
| North/South America | 25 |
| Air North | 4 |
| Albatros Airlines | 1 |
| Bahamasair | 3 |
| Boliviana de Aviacion | 1 |
| EasySky | 1 |
| LAC – Línea Aérea Cuencana | 1 |
| Magnicharters | 1 |
| Peruvian Airlines | 1 |
| Southwest Airlines | 12 |
| BOEING 737-600 | 57 |
| Africa | 12 |
| Air Algerie | 5 |
| Tunisair | 7 |
| Europe | 26 |
| SAS | 26 |
| North/South America | 19 |
| EG&G Special Projects | 6 |
| WestJet | 13 |
| BOEING 737-700 | 1,036 (26) |
| Africa | 41 (2) |
| Air Algerie | (2) |
| Arik Air | 9 |
| ASKY Airlines | 3 |
| Camair Co | 2 |
| ECair | 1 |
| Ethiopian Airlines | 5 |
| Kenya Airways | 4 |
| Linhas Aereas de Mocambique | 1 |
| Mauritania Airlines International | 1 |
| Royal Air Maroc | 6 |
| RwandAir | 2 |
| SonAir | 2 |
| TAAG Angola Airlines | 5 |
| Asia, Australasia & Middle East | 208 |
| Air China | 20 |
| Air China Inner Mongolia | 1 |
| Air Do | 6 |
| Air Niugini | 1 |
| ANA – All Nippon Airways | 12 |
| China Eastern Airlines | 4 |
| China Eastern Yunnan | 40 |
| China Southern Airlines | 31 |
| China United Airlines | 8 |
| Eastar Jet | 3 |
| El Al | 2 |
| Fiji Airways | 1 |
| Hainan Airlines | 5 |
| Hebei Airlines | 2 |
| Iraqi Airways | 2 |
| Jet Airways | 6 |
| Kunming Airlines | 8 |
| Lucky Air | 12 |
| Oman Air | 1 |
| Regent Airways | 2 |
| Ruili Airlines | 4 |
| SCAT | 1 |
| Shandong Airlines | 3 |
| Shanghai Airlines | 10 |
| Shenzhen Airlines | 1 |
| Turkmenistan Airlines | 3 |
| Virgin Australia | 2 |
| Xiamen Airlines | 17 |
| Europe | 121 |
| airberlin | 8 |
| Airzena – Georgian Airways | 2 |
| Anadolu Jet | 4 |
| Blue Air | 1 |
| Europe Airpost | 4 |
| Gazpromavia | 2 |
| Germania | 10 |
| Jet Time | 3 |
| Jet Time Finland | 2 |
| Jetairfly | 4 |

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|--|--------------------|--------------------------------|--------------------|--|------------------|--|------------|
| KLM Royal Dutch Airlines | 18 | Jeju Air | 20 (5) | Travel Service Airlines | 20 | MaxAir | 3 |
| Luxair | 2 | Jet Airways | 63 | Travel Service Hungary | 1 | Asia, Australasia & Middle East | 4 |
| Meridiana | 3 | JetConnect | 8 | Travel Service Poland | 1 | Mahan Air | 2 |
| Monarch Airlines | 1 | Jin Air | 12 | Travel Service Slovakia | 1 | Orient Thai Airlines | 1 |
| Primera Air Scandinavia | 2 | Korean Air | 17 (6) | TUIfly | 27 | Pakistan International Airlines | 1 |
| SAS | 29 | Kunming Airlines | 5 (1) | TUIfly Nordic AB | 5 | Europe | 1 |
| Smartwings | 2 | Lion Air | 30 (12) | Turkish Airlines (THY) | 68 (20) | The Cargo Airlines | 1 |
| TAROM | 4 | Lucky Air | 6 (1) | Ukraine International Airlines | 8 (1) | BOEING 747-400 | 453 |
| Transaero Airlines | 7 | Malaysia Airlines | 57 (10) | UTair | 9 (27) | Africa | 2 |
| Transavia Airlines | 9 | Malindo Air | 3 (7) | UTair Ukraine | 3 | MaxAir | 1 |
| Turkish Airlines (THY) | 3 | MIAT – Mongolian Airlines | 2 (2) | XL Airways France | 1 | Royal Air Maroc | 1 |
| Yakutia Airlines | 1 | Mihin Lanka | (2) | Yakutia Airlines | 3 | Asia, Australasia & Middle East | 206 |
| North/South America | 666 (24) | Myanmar National Airlines | 1 (5) | North/South America | 901 (178) | Air China | 3 |
| Aerolineas Argentinas | 22 | Nok Air | 18 (7) | Aerolineas Argentinas | 16 (23) | Air China Cargo (F) | 3 |
| Aeromexico | 22 | Okay Airways | 13 (4) | Aeromexico | 29 | Air Hong Kong (BCF) | 3 |
| Alaska Airlines | 14 | Oman Air | 18 | Air Transat | 4 (4) | Air India | 5 |
| Boliviana de Aviación | 2 | Pegasus Asia | 1 | Alaska Airlines | 61 | Asiana Airlines | 2 |
| Copa Airlines | 10 | Qantas | 67 | American Airlines | 256 (48) | Asiana Airlines (Combi) | 2 |
| Copa Airlines Colombia | 4 | Ruihli Airlines | 1 | Canjet Airlines | 1 | Asiana Airlines (F) | 4 |
| Delta Air Lines | 10 | Shandong Airlines | 77 (2) | Caribbean Airlines | 14 | Asiana Airlines (SF) | 6 |
| Enerjet | 3 | Shanghai Airlines | 50 | Copa Airlines | 57 (22) | Cargo Air Lines (ERF) | 1 |
| GOL | 32 | Shenzhen Airlines | 79 (1) | Delta Air Lines | 73 | Cargo Air Lines (F) | 1 |
| Southwest Airlines | 444 (24) | SilkAir | 11 (12) | Eastern Air Lines | 1 (10) | Cathay Pacific | 3 |
| Sun Country Airlines | 6 | Skymark Airlines | 27 | GOL | 98 (18) | Cathay Pacific (ERF) | 6 |
| United Airlines | 38 | Solaseed Air | 12 | Miami Air International | 3 | Cathay Pacific (F) | 2 |
| WestJet | 59 | Somon Air | 2 | Southwest Airlines | 98 (38) | China Airlines | 11 |
| BOEING 737-800 | 3,629 (773) | SpiceJet | 16 | Sun Country Airlines | 13 | China Airlines (F) | 18 |
| Africa | 136 (25) | Spring Airlines Japan | 3 | Sunwing Airlines | 12 (2) | China Cargo Airlines (ERF) | 2 |
| Air Algerie | 18 (7) | Sriwijaya Air | 10 | United Airlines | 130 | China Cargo Airlines (F) | 2 |
| Air Austral | 2 | Thai Lion Air | (1) | WestJet | 35 (13) | EI AI | 6 |
| AMC Airlines | 1 | Turkmenistan Airlines | 5 (3) | BOEING 737-900 | 380 (164) | EI AI (F) | 1 |
| Arik Air | 4 (8) | T'way Air | 10 | Asia, Australasia & Middle East | 142 (51) | Emirates Airline (ERF) | 2 |
| CEIBA Intercontinental | 3 | Up | 4 | Batik Air (ER) | 6 | Ethiad Airways (F) | 1 |
| Comair (South Africa) | 2 (4) | Urumqi Airlines | 3 | EI AI (ER) | 5 (3) | EVA Air | 3 |
| Egyptair | 20 | Virgin Australia | 55 (16) | Jet Airways | 2 | EVA Air (F) | 3 |
| Ethiopian Airlines | 12 (1) | Virgin Australia International | 18 | Jet Airways (ER) | 4 | EVA Air (SF) | 5 |
| flyEgypt | 1 | Xiamen Airlines | 91 (9) | Korean Air | 16 | Flynas (Combi) | 1 |
| Kenya Airways | 7 (1) | Europe | 1,038 (365) | Korean Air (ER) | 6 | Garuda Indonesia | 2 |
| Kulula | 9 | Aeroflot Russian Airlines | 11 (36) | Lion Air (ER) | 71 (40) | Iraqi Airways | 2 |
| Linhas Aéreas de Moçambique | (3) | Air Europa | 20 (8) | Malindo Air (ER) | 6 | Korean Air | 13 |
| Malawian Airlines | 1 | airberlin | 26 | Okay Airways (ER) | 1 (5) | Korean Air (ERF) | 8 |
| Mango | 8 | AirExplore | 1 | Oman Air (ER) | 4 (1) | Korean Air (F) | 9 |
| Midwest Airlines (Egypt) | (1) | ALROSA Air Company | 3 | Shenzhen Airlines | 5 | Lion Air | 2 |
| Royal Air Maroc | 30 | Anadolu Jet | 28 | Somon Air (ER) | 2 | Malaysia Airlines (F) | 2 |
| RwandAir | 2 | Arkefly | 7 | SpiceJet (ER) | 1 | Nippon Cargo Airlines (F) | 5 |
| South African Airways | 11 | Belavia | 2 (3) | Sriwijaya Air (ER) | (2) | Orient Thai Airlines | 4 |
| TACV – Cabo Verde Airlines | 1 | Blue Air | 1 | Thai Lion Air (ER) | 13 | Qantas | 5 |
| Tassili Airlines | 4 | Corendon Airlines | 10 | Europe | 25 (7) | Qantas (ER) | 6 |
| Asia, Australasia & Middle East | 1,554 (205) | Corendon Dutch Airlines | 4 | KLM Royal Dutch Airlines | 5 | Qantas (F) | 2 |
| 9 Air | 5 | Enter Air | 9 (2) | Travel Service Airlines (ER) | 1 | Saudia | 15 |
| Air China | 104 (1) | Globus | 13 | Turkish Airlines (THY) (ER) | 15 | Saudia (BCF) | 1 |
| Air China Inner Mongolia | 2 | Ikar Airlines | 1 | Ukraine International Airlines (ER) | 4 | Saudia (ERF) | 2 |
| Air India Express | 17 (3) | Izair | 7 | UTair (ER) | (7) | Saudia (F) | 2 |
| Air Niugini | 2 | Jet2 | 17 | North/South America | 213 (106) | Saudia (SF) | 7 |
| Air Vanuatu | 1 | Jetairfly | 13 | Alaska Airlines | 12 | Singapore Airlines Cargo (F) | 8 |
| ANA – All Nippon Airways | 31 (5) | KLM Royal Dutch Airlines | 25 | Alaska Airlines (ER) | 27 (38) | Thai Airways International | 12 |
| Batik Air | 13 | Luxair | 4 | Delta Air Lines (ER) | 42 (58) | Yangtze River Express (SF) | 3 |
| Biman Bangladesh Airlines | 2 (2) | Meridiana | 4 | United Airlines | 12 | Europe | 152 |
| Chang An Airlines | 4 | NEOS | 6 | United Airlines (ER) | 120 (10) | Aerotranscargo (SF) | 1 |
| China Airlines | 16 (3) | Nordwind Airlines | 5 | BOEING 747-100 | 1 | Air Cargo Global (F) | 1 |
| China Eastern Airlines | 37 (34) | Norwegian | 78 (42) | Asia, Australasia & Middle East | 1 | Air Cargo Global (SF) | 1 |
| China Eastern Yunnan | 14 | Norwegian Air International | 9 | Caspian Airlines | 1 | Air France | 5 |
| China Southern Airlines | 124 (5) | Orenair | 15 | BOEING 747-200 | 24 | AirBridgeCargo (BCF) | 1 |
| China United Airlines | 22 | Pegasus | 47 | Africa | 3 | AirBridgeCargo (ERF) | 5 |
| China Xinhua Airlines | 5 | Pobeda | 12 (1) | Kabo Air | 3 | AirBridgeCargo (F) | 3 |
| Dalian Airlines | 8 | Primera Air Nordic | 4 | Asia, Australasia & Middle East | 14 | British Airways | 42 |
| Donghai Airlines | 5 | Primera Air Scandinavia | 2 | AHS Air International | 2 | Cargolux (BCF) | 2 |
| Eastar Jet | 9 | Royal Flight | 1 | Caspian Airlines | 1 | Cargolux (ERF) | 2 |
| EI AI | 11 | Ryanair | 320 (162) | Iran Air | 2 | Cargolux (F) | 6 |
| Far Eastern Air Transport | (1) | S7 Airlines | (8) | Kam Air | 2 | Cargolux Italia (F) | 2 |
| Fiji Airways | 4 | SAS | 29 | Midex Airlines | 3 | Corsair | 3 |
| flydubai | 49 (13) | Smartwings | 9 | Uni-Top Airlines | 3 | KLM Royal Dutch Airlines | 5 |
| Fuzhou Airlines | 5 | SunExpress | 23 (23) | Vision Air International | 1 | KLM Royal Dutch Airlines (Combi) | 17 |
| Garuda Indonesia | 79 | SunExpress Germany | 14 | Europe | 2 | Lufthansa | 17 |
| Grand China Air | 3 | Tailwind Airlines | 2 | Continental Airways | 1 | Martinair (BCF) | 1 |
| Hainan Airlines | 103 (6) | Taimyr Air – NordStar | 9 | TransAVIAexport Airlines | 1 | Martinair (ERF) | 3 |
| Hebei Airlines | 4 (1) | Thomson Airways | 35 | North/South America | 5 | myCARGO Airlines (SF) | 1 |
| Iraqi Airways | 10 (19) | Transaero Airlines | 18 (11) | Kalitta Air | 5 | Silk Way Italia (F) | 1 |
| Japan Airlines | 50 | Transavia Airlines | 27 (3) | BOEING 747-300 | 8 | Silk Way West Airlines (F) | 2 |
| Japan TransOcean Air | (6) | Transavia France | 20 (18) | Africa | 3 | TNT Airways (ERF) | 2 |

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| Transaero Airlines | 15 |
| Virgin Atlantic Airways | 12 |
| Wamos Air | 2 |
| North/South America | 93 |
| Atlas Air | 4 |
| Atlas Air (BCF) | 2 |
| Atlas Air (F) | 11 |
| Atlas Air (LCF) | 4 |
| Centurion Air Cargo (ERF) | 3 |
| Centurion Air Cargo (F) | 1 |
| Delta Air Lines | 13 |
| Kalitta Air (BCF) | 6 |
| Kalitta Air (ERF) | 1 |
| Kalitta Air (F) | 2 |
| National Airlines (BCF) | 2 |
| Polar Air Cargo (F) | 7 |
| United Airlines | 24 |
| UPS Airlines (BCF) | 2 |
| UPS Airlines (F) | 11 |
| BOEING 747-8 | 84 (29) |
| Africa | (2) |
| Arik Air (8I) | (2) |
| Asia, Australasia & Middle East | 37 (18) |
| Air China (8I) | 7 |
| Cathay Pacific (8F) | 13 (1) |
| Ethiad Airways (8F) | 1 |
| Korean Air (8F) | 6 (1) |
| Korean Air (8I) | (10) |
| Nippon Cargo Airlines (8F) | 8 (6) |
| Saudia (8F) | 2 |
| Europe | 39 (9) |
| AirBridgeCargo (8F) | 6 |
| Cargolux (8F) | 12 (2) |
| Lufthansa (8I) | 19 |
| Silk Way West Airlines (8F) | 2 (3) |
| Transaero Airlines (8I) | (4) |
| North/South America | 8 |
| Atlas Air (8F) | 2 |
| Polar Air Cargo (8F) | 6 |
| BOEING 747SP | 1 |
| Asia, Australasia & Middle East | 1 |
| Iran Air | 1 |
| BOEING 757-200 | 683 |
| Africa | 9 |
| ECair | 2 |
| Ethiopian Airlines | 4 |
| Ethiopian Airlines (PF) | 1 |
| Ethiopian Airlines (SF) | 1 |
| TACV - Cabo Verde Airlines | 1 |
| Asia, Australasia & Middle East | 63 |
| Air Astana | 5 |
| Air China Cargo (SF) | 4 |
| Blue Dart Aviation (SF) | 5 |
| China Southern Airlines | 12 |
| DHL International Aviation EEMEA (SF) | 3 |
| Mega Maldives Airlines | 1 |
| Nepal Airlines | 1 |
| Nepal Airlines (Combi) | 1 |
| SCAT | 2 |
| SF Airlines (SF) | 10 |
| Sunday Airlines | 2 |
| Tajik Air | 2 |
| Tasman Cargo Airlines (SF) | 1 |
| Turkmenistan Airlines | 3 |
| Uzbekistan Airways | 5 |
| Xiamen Airlines | 6 |
| Europe | 131 |
| Aer Lingus | 3 |
| Azerbaijan Airlines | 4 |
| Cygnus Air (SF) | 2 |
| DHL Air (SF) | 21 |
| easyJet | 1 |
| European Air Transport (PF) | 1 |
| European Air Transport (SF) | 10 |
| Icelandair | 23 |
| Icelandair (PF) | 1 |
| Icelandair (SF) | 1 |
| Ifly | 4 |
| Jet2 | 12 |
| Katekavia | 9 |

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| La Compagnie | 2 |
| OpenSkies | 3 |
| Privilege Style | 1 |
| Royal Flight | 5 |
| Thomas Cook Airlines | 4 |
| Thomson Airways | 14 |
| Titan Airways | 1 |
| TNT Airways (Combi) | 1 |
| TNT Airways (PF) | 1 |
| VIM Airlines | 6 |
| Yakutia Airlines (SF) | 1 |
| North/South America | 480 |
| Allegiant Air | 6 |
| American Airlines | 84 |
| ATI - Air Transport International (Combi) | 4 |
| ATI - Air Transport International (SF) | 5 |
| Cargojet Airways (SF) | 5 |
| Delta Air Lines | 122 |
| DHL Aero Expreso (SF) | 3 |
| FedEx (SF) | 96 |
| Fly Jamaica | 1 |
| Morningstar Air Express (SF) | 5 |
| National Airlines | 2 |
| SBA Airlines | 2 |
| United Airlines | 70 |
| UPS Airlines (PF) | 75 |
| BOEING 757-300 | 55 |
| Asia, Australasia & Middle East | 2 |
| Arkia | 2 |
| Europe | 16 |
| Condor | 13 |
| Icelandair | 1 |
| Thomas Cook Airlines | 2 |
| North/South America | 37 |
| Delta Air Lines | 16 |
| United Airlines | 21 |
| BOEING 767-200 | 84 |
| Africa | 4 |
| Air Zimbabwe (ER) | 2 |
| Eritrean Airlines (ER) | 1 |
| Interair (ERM) | 1 |
| Asia, Australasia & Middle East | 9 |
| Asian Air (ER) | 1 |
| Jet Asia Airways (ER) | 3 |
| Jet Asia Airways (ERM) | 1 |
| Jordan Aviation (EM) | 1 |
| Jordan Aviation (ER) | 1 |
| Kam Air | 1 |
| Raya Airways (SF) | 1 |
| Europe | 20 |
| Aer Lingus (ER) | 1 |
| Meridiana (ER) | 1 |
| Star Air (EMSF) | 1 |
| Star Air (ERSF) | 4 |
| Star Air (SF) | 7 |
| TNT Airways (SF) | 1 |
| Transaero Airlines (ER) | 2 |
| UTair (ER) | 3 |
| North/South America | 51 |
| 21 Air (ERSF) | 2 |
| ABX Air (ERSF) | 1 |
| ABX Air (SF) | 20 |
| Aeromexico (ER) | 2 |
| AeroUnion (ERSF) | 2 |
| Amerijet International (SF) | 4 |
| ATI - Air Transport International (SF) | 2 |
| Atlas Air (EMSF) | 5 |
| Atlas Air (SF) | 4 |
| Cargojet Airways (ERSF) | 1 |
| Cargojet Airways (SF) | 3 |
| Dynamic Airways | 1 |
| Dynamic Airways (ER) | 2 |
| Omni Air International (ER) | 1 |
| Vision Airlines (ERM) | 1 |
| BOEING 767-300 | 644 (34) |
| Africa | 17 |
| Air Algerie | 3 |
| Camair Co (ER) | 1 |
| ECair (ER) | 1 |
| Ethiopian Airlines (ER) | 7 |

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| Royal Air Maroc (ER) | 4 |
| Tradecraft Air Nigeria | 1 |
| Asia, Australasia & Middle East | 160 |
| Air Astana (ER) | 3 |
| Air Do | 2 |
| Air Do (ER) | 2 |
| Air Japan (ER) | 8 |
| Air Japan (ERF) | 3 |
| Air New Zealand (ER) | 5 |
| Air Niugini (ER) | 2 |
| ANA - All Nippon Airways | 16 |
| ANA - All Nippon Airways (ER) | 25 |
| Asia Atlantic Airlines (Thailand) (ER) | 2 |
| Asiana Airlines | 7 |
| Asiana Airlines (ERF) | 1 |
| EI AI (ER) | 7 |
| Express Freighters Australia (ERF) | 1 |
| Hainan Airlines (ER) | 3 |
| Iraqi Airways (ER) | 2 |
| Japan Airlines | 12 |
| Japan Airlines (ER) | 32 |
| Jet Asia Airways (ER) | 1 |
| Mega Maldives Airlines (ER) | 3 |
| MIAT - Mongolian Airlines (ER) | 2 |
| Orient Thai Airlines | 5 |
| Orient Thai Airlines (ER) | 1 |
| Shanghai Airlines | 4 |
| Shanghai Airlines (ER) | 2 |
| Sunday Airlines (ER) | 1 |
| Uzbekistan Airways (ER) | 6 |
| Uzbekistan Airways (ERSF) | 2 |
| Europe | 99 |
| Austrian (ER) | 6 |
| Azerbaijan Airlines (ER) | 2 |
| Blue Panorama Airlines (ER) | 3 |
| British Airways (ER) | 14 |
| Condor (ER) | 13 |
| DHL Air (ERF) | 4 |
| EuroAtlantic Airways (ER) | 5 |
| EuroAtlantic Airways (ERSF) | 1 |
| Ikar Airlines (ER) | 6 |
| Jetairfly (ER) | 1 |
| Katekavia (ER) | 4 |
| Meridiana (ER) | 2 |
| NEOS (ER) | 3 |
| Nordwind Airlines (ER) | 2 |
| S7 Airlines (ER) | 2 |
| SkyGreece Airlines (ER) | 1 |
| Thomas Cook Airlines (ER) | 3 |
| Thomson Airways (ER) | 4 |
| Titan Airways (ER) | 1 |
| Transaero Airlines (ER) | 16 |
| TUIFly Nordic AB (ER) | 2 |
| Ukraine International Airlines (ER) | 4 |
| North/South America | 368 (34) |
| ABX Air (ERSF) | 7 |
| Aeromexico (ER) | 1 |
| Air Canada (ER) | 17 |
| Air Canada Rouge (ER) | 14 |
| American Airlines (ER) | 56 |
| Amerijet International (ERSF) | 2 |
| Atlas Air (ER) | 3 |
| Boliviana de Aviacion (ER) | 2 |
| Cargojet Airways (ER) | 3 |
| Cargojet Airways (ERSF) | 3 |
| Caribbean Airlines (ER) | 2 |
| Delta Air Lines | 16 |
| Delta Air Lines (ER) | 58 |
| Dynamic Airways (ER) | 1 |
| FedEx (ERF) | 22 (34) |
| Fly Jamaica (ER) | 1 |
| Hawaiian Airlines | 1 |
| Hawaiian Airlines (ER) | 8 |
| LAN Airlines (ER) | 18 |
| LAN Argentina (ER) | 2 |
| LAN Cargo (ERF) | 2 |
| LAN Cargo Colombia (ERF) | 1 |
| LAN Colombia (ER) | 3 |
| MasAir (ERF) | 1 |
| Omni Air International (ER) | 7 |

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|--|------------|
| Polar Air Cargo (ERF) | 2 |
| SBA Airlines (ER) | 2 |
| TAM Cargo (ERF) | 4 |
| TAM Linhas Aéreas (ER) | 14 |
| United Airlines (ER) | 35 |
| UPS Airlines (ERF) | 59 |
| Vision Airlines (ER) | 1 |
| BOEING 767-400 | 37 |
| North/South America | 37 |
| Delta Air Lines (ER) | 21 |
| United Airlines (ER) | 16 |
| BOEING 777-200/200ER | 469 |
| Africa | 4 |
| Egyptair (ER) | 1 |
| TAAG Angola Airlines (ER) | 3 |
| Asia, Australasia & Middle East | 213 |
| Air China | 10 |
| Air New Zealand (ER) | 8 |
| ANA - All Nippon Airways | 16 |
| ANA - All Nippon Airways (ER) | 12 |
| Asiana Airlines (ER) | 11 |
| Biman Bangladesh Airlines (ER) | 2 |
| Cathay Pacific | 5 |
| China Southern Airlines | 4 |
| EI AI (ER) | 6 |
| Emirates Airline (ER) | 6 |
| Japan Airlines | 12 |
| Japan Airlines (ER) | 11 |
| Jin Air (ER) | 1 |
| Korean Air (ER) | 17 |
| Kuwait Airways (ER) | 2 |
| Malaysia Airlines (ER) | 13 |
| NokScoot (ER) | 3 |
| Pakistan International Airlines (ER) | 4 |
| Saudia (ER) | 23 |
| Scot (ER) | 2 |
| Singapore Airlines (ER) | 23 |
| Thai Airways International | 8 |
| Thai Airways International (ER) | 6 |
| Vietnam Airlines (ER) | 8 |
| Europe | 117 |
| Air France (ER) | 25 |
| Alitalia (ER) | 10 |
| Austrian (ER) | 5 |
| British Airways | 3 |
| British Airways (ER) | 43 |
| EuroAtlantic Airways (ER) | 1 |
| KLM Royal Dutch Airlines (ER) | 15 |
| Nordwind Airlines (ER) | 3 |
| Orenair (ER) | 3 |
| Transaero Airlines | 2 |
| Transaero Airlines (ER) | 7 |
| North/South America | 135 |
| Aeromexico (ER) | 4 |
| American Airlines (ER) | 47 |
| Delta Air Lines (ER) | 8 |
| Omni Air International (ER) | 2 |
| United Airlines | 19 |
| United Airlines (ER) | 55 |
| BOEING 777-200LR | 55 |
| Africa | 8 |
| Air Austral | 1 |
| CEIBA Intercontinental | 1 |
| Ethiopian Airlines | 6 |
| Asia, Australasia & Middle East | 31 |
| Air India | 2 |
| Emirates Airline | 10 |
| Ethiad Airways | 5 |
| Iraqi Airways | 1 |
| Pakistan International Airlines | 2 |
| Qatar Airways | 9 |
| Turkmenistan Airlines | 2 |
| North/South America | 16 |
| Air Canada | 6 |
| Delta Air Lines | 10 |
| BOEING 777-300 | 58 |
| Asia, Australasia & Middle East | 53 |
| ANA - All Nippon Airways | 7 |
| Cathay Pacific | 12 |
| Emirates Airline | 12 |



Boeing

The Boeing 787 has entered the top 10 mainline fleets

| | |
|---------------------------------|------------------|
| Japan Airlines | 5 |
| Korean Air | 4 |
| Singapore Airlines | 7 |
| Thai Airways International | 6 |
| Europe | 5 |
| Transaero Airlines | 5 |
| BOEING 777-300ER | 575 (184) |
| Africa | 19 (4) |
| Air Austral | 3 (2) |
| Egyptair | 6 |
| Ethiopian Airlines | 4 |
| Kenya Airways | 3 |
| TAAG Angola Airlines | 3 (2) |
| Asia, Australasia & Middle East | 418 (131) |
| Air China | 20 |
| Air India | 12 (3) |
| Air New Zealand | 7 |
| ANA - All Nippon Airways | 22 (6) |
| Biman Bangladesh Airlines | 4 |
| Cathay Pacific | 51 (2) |
| China Airlines | 6 (4) |
| China Eastern Airlines | 6 (14) |
| China Southern Airlines | 5 (5) |
| Emirates Airline | 104 (48) |
| Ethiad Airways | 25 |
| EVA Air | 21 (7) |
| Garuda Indonesia | 7 (3) |
| Japan Airlines | 13 |
| Jet Airways | 4 |
| Korean Air | 14 (10) |
| Kuwait Airways | (10) |
| Pakistan International Airlines | 3 (5) |
| Philippine Airlines | 6 (2) |
| Qatar Airways | 28 (6) |
| Saudia | 17 (3) |
| Singapore Airlines | 25 (2) |
| Thai Airways International | 13 (1) |
| Virgin Australia International | 5 |
| Europe | 94 (34) |
| Aeroflot Russian Airlines | 13 (7) |
| Air France | 39 (2) |
| British Airways | 12 |
| KLM Royal Dutch Airlines | 10 (4) |

| | |
|---------------------------------|-----------------|
| Swiss Global Air Lines | (9) |
| Turkish Airlines (THY) | 20 (12) |
| North/South America | 44 (15) |
| Air Canada | 17 (2) |
| American Airlines | 17 (3) |
| TAM Linhas Aereas | 10 |
| United Airlines | (10) |
| BOEING 777-9X | (53) |
| Asia, Australasia & Middle East | (53) |
| Emirates Airline | (35) |
| Ethiad Airways | (8) |
| Qatar Airways | (10) |
| BOEING 777-9X | (243) |
| Asia, Australasia & Middle East | (223) |
| ANA - All Nippon Airways | (20) |
| Cathay Pacific | (21) |
| Emirates Airline | (115) |
| Ethiad Airways | (17) |
| Qatar Airways | (50) |
| Europe | (20) |
| Lufthansa | (20) |
| BOEING 777F | 108 (36) |
| Africa | 4 (2) |
| Ethiopian Airlines | 4 (2) |
| Asia, Australasia & Middle East | 53 (23) |
| Air China Cargo | 7 (1) |
| China Cargo Airlines | 6 |
| China Southern Airlines | 11 (1) |
| Emirates Airline | 12 (1) |
| Ethiad Airways | 3 (1) |
| Hong Kong Airlines | (6) |
| Korean Air | 5 (5) |
| Qatar Airways | 8 (8) |
| Saudia | 1 |
| Europe | 18 |
| AeroLogic | 8 |
| Air France | 2 |
| Lufthansa Cargo | 5 |
| TNT Airways | 3 |
| North/South America | 33 (11) |
| FedEx | 25 (9) |
| LAN Cargo | 4 |
| Southern Air | 4 |

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|---------------------------------|------------------|
| TAM Cargo | (2) |
| BOEING 787-8 | 253 (186) |
| Africa | 22 (13) |
| Air Austral | (2) |
| Ethiopian Airlines | 13 (6) |
| Kenya Airways | 7 (2) |
| Royal Air Maroc | 2 (3) |
| Asia, Australasia & Middle East | 146 (86) |
| Air Astana | (3) |
| Air India | 21 (6) |
| Air Niugini | (1) |
| ANA - All Nippon Airways | 33 (3) |
| Biman Bangladesh Airlines | (4) |
| China Southern Airlines | 10 |
| Gulf Air | (16) |
| Hainan Airlines | 10 |
| Iraqi Airways | (10) |
| Japan Airlines | 22 (3) |
| Jetstar | 9 |
| Oman Air | (6) |
| Qantas | (5) |
| Qatar Airways | 22 (8) |
| Royal Brunei Airlines | 4 (1) |
| Royal Jordanian | 5 (6) |
| Scot | (10) |
| Thai Airways International | 5 (1) |
| Uzbekistan Airways | (2) |
| Xiamen Airlines | 5 (1) |
| Europe | 37 (39) |
| Aeroflot Russian Airlines | (26) |
| Air Europa | 1 (8) |
| Arkefly | 3 |
| Azerbaijan Airlines | 2 |
| British Airways | 8 |
| Finnair | 1 |
| Icelandair | (1) |
| Jetairfly | 1 |
| LOT Polish Airlines | 4 (2) |
| NEOS | (2) |
| Norwegian | 6 |
| Norwegian Air International | 2 |
| Thomson Airways | 9 |
| North/South America | 48 (48) |

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|---------------------------------|-----------------|
| Aeromexico | 7 (2) |
| Air Canada | 8 |
| American Airlines | 6 (14) |
| Avianca | 5 (10) |
| Delta Air Lines | (18) |
| LAN Airlines | 10 (4) |
| United Airlines | 12 |
| BOEING 787-9 | 33 (362) |
| Africa | (7) |
| Arik Air | (7) |
| Asia, Australasia & Middle East | 18 (177) |
| Air China | (15) |
| Air New Zealand | 3 (9) |
| Air Tahiti Nui | (2) |
| ANA - All Nippon Airways | 5 (39) |
| Ethiad Airways | 4 (37) |
| Hainan Airlines | (2) |
| Japan Airlines | 1 (19) |
| Jet Airways | (10) |
| Korean Air | (10) |
| Saudia | (8) |
| Scot | 5 (5) |
| Thai Airways International | (2) |
| Vietnam Airlines | (19) |
| Europe | 6 (93) |
| Air Europa | (14) |
| Air France | (8) |
| Air France-KLM Group | (2) |
| British Airways | (22) |
| KLM Royal Dutch Airlines | (27) |
| Norwegian | (6) |
| Thomson Airways | (3) |
| Virgin Atlantic Airways | 6 (11) |
| North/South America | 9 (85) |
| Aeromexico | (7) |
| Air Canada | (29) |
| American Airlines | (22) |
| LAN Airlines | 3 (15) |
| United Airlines | 6 (12) |
| BOEING 787-10 | (100) |
| Asia, Australasia & Middle East | (63) |
| ANA - All Nippon Airways | (3) |
| Ethiad Airways | (30) |

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|--|-------------|
| Singapore Airlines | (30) |
| Europe | (12) |
| British Airways | (12) |
| North/South America | (25) |
| United Airlines | (25) |
| BOEING MD-11 | 127 |
| Africa | 5 |
| Allied Air Cargo (Freighter) | 2 |
| Global Africa Aviation (Freighter) | 3 |
| Europe | 18 |
| Lufthansa Cargo (Freighter) | 14 |
| Martinair (CF) | 1 |
| Martinair (Freighter) | 3 |
| North/South America | 104 |
| Avianca Cargo (Freighter) | 1 |
| Centurion Air Cargo (Freighter) | 3 |
| FedEx (Freighter) | 57 |
| Sky Lease Cargo (Freighter) | 4 |
| UPS Airlines (Freighter) | 38 |
| Western Global Airlines (Freighter) | 1 |
| BOEING MD-80 | 426 |
| Africa | 8 |
| Africa Charter Airline (83) | 1 |
| African Express Airways (82) | 1 |
| Canadian Airways Congo (82) | 1 |
| DANA Air (82) | 1 |
| DANA Air (83) | 3 |
| Global Aviation Operations (82) | 1 |
| Asia, Australasia & Middle East | 67 |
| AIRFAST Indonesia (82) | 2 |
| AIRFAST Indonesia (83) | 2 |
| ATA Air (83) | 6 |
| Caspian Airlines (82) | 1 |
| Caspian Airlines (83) | 4 |
| Far Eastern Air Transport (82) | 5 |
| Far Eastern Air Transport (83) | 3 |
| FitsAir (82SF) | 1 |
| Gryphon Airlines (87) | 1 |
| Iran Air (82) | 3 |
| Iran Airtours (82) | 7 |
| Iran Airtours (83) | 2 |
| Kam Air (82) | 1 |
| Kam Air (83) | 2 |
| Kam Air (87) | 2 |
| Kish Air (82) | 4 |
| Kish Air (83) | 3 |
| Taban Air (88) | 5 |
| TAC Airlines (83) | 1 |
| United Airways (83) | 3 |
| Zagros Airlines (82) | 5 |
| Zagros Airlines (83) | 4 |
| Europe | 20 |
| Bravo Air (82) | 1 |
| Bravo Air (83) | 1 |
| Bulgarian Air Charter (82) | 8 |
| Dart Airlines (83) | 2 |
| DAT – Danish Air Transport (83) | 1 |
| DAT – Danish Air Transport (87) | 1 |
| Meridiana (82) | 4 |
| Mistral Air (82) | 2 |
| North/South America | 331 |
| Aeronaves TSM (82SF) | 1 |
| Aeronaves TSM (83SF) | 1 |
| Aeropostal (82) | 5 |
| Allegiant Air (82) | 1 |
| Allegiant Air (83) | 46 |
| Allegiant Air (88) | 6 |
| American Airlines (82) | 56 |
| American Airlines (83) | 58 |
| Ameristar Charters (83) | 2 |
| Andes Líneas Aéreas (83) | 3 |
| Aserca Airlines (82) | 2 |
| Aserca Airlines (83) | 5 |
| Delta Air Lines (88) | 116 |
| Everts Air Alaska (82SF) | 1 |
| InselAir (82) | 4 |
| InselAir (83) | 1 |
| InselAir Aruba (83) | 2 |
| LASER (81) | 5 |
| LASER (82) | 4 |

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| Orange Air (83) | 1 |
| Perla Airlines (83) | 2 |
| USA Jet Airlines (83SF) | 1 |
| Venezolana (82) | 1 |
| Venezolana (83) | 1 |
| World Atlantic Airlines (82) | 1 |
| World Atlantic Airlines (83) | 5 |
| BOEING MD-90 | 71 |
| Asia, Australasia & Middle East | 6 |
| EVA Air (30ER) | 3 |
| UNI Air (30) | 2 |
| UNI Air (30ER) | 1 |
| North/South America | 65 |
| Delta Air Lines (30) | 64 |
| Delta Air Lines (30ER) | 1 |
| BOMBARDIER CRJ100/200 | 563 |
| Africa | 27 |
| Air Tanzania (200ER) | 1 |
| CemAir (100ER) | 2 |
| DAC Aviation East Africa (200LR) | 1 |
| Fly540 (100ER) | 1 |
| Fly-SAX (100ER) | 3 |
| Interstate Airways (100LR) | 2 |
| Maluti Sky (200B ER) | 2 |
| Nova Airways (200ER) | 3 |
| Proflight Zambia (100ER) | 1 |
| SA Express (200B ER) | 4 |
| SA Express (200ER) | 4 |
| SA Express (200LR) | 2 |
| Skyward International Aviation (200LR) | 1 |
| Asia, Australasia & Middle East | 24 |
| 7th Sky (100ER) | 2 |
| Afghan Jet International Airlines (200LR) | 2 |
| FMI Air Charter (200LR) | 1 |
| Ibex Airlines (100LR) | 1 |
| Ibex Airlines (200ER) | 2 |
| J-Air (200ER) | 9 |
| Saurya Airlines (200ER) | 1 |
| SCAT (200B LR) | 1 |
| SCAT (200ER) | 2 |
| SCAT (200LR) | 3 |
| Europe | 64 |
| Adria Airways (200LR) | 1 |
| Air Nostrum (200ER) | 10 |
| Airzena - Georgian Airways (100ER) | 1 |
| Airzena - Georgian Airways (200LR) | 2 |
| Belavia (100LR) | 1 |
| Belavia (200ER) | 2 |
| Belavia (200LR) | 1 |
| HOP! (100ER) | 4 |
| IrAero (100ER) | 1 |
| IrAero (200LR) | 4 |
| Rusline (100ER) | 4 |
| Rusline (100LR) | 3 |
| Rusline (200ER) | 4 |
| Rusline (200LR) | 6 |
| Severstal Aircompany (200ER) | 1 |
| Severstal Aircompany (200LR) | 5 |
| UTair (200LR) | 2 |
| West Air Europe (200PF) | 3 |
| Yamal Airlines (200B LR) | 1 |
| Yamal Airlines (200LR) | 8 |
| North/South America | 448 |
| Aerolineas SOSA (100ER) | 1 |
| Air Georgian (100ER) | 6 |
| Air Georgian (200LR) | 1 |
| Air Wisconsin (200ER) | 6 |
| Air Wisconsin (200LR) | 65 |
| Amazonsas (200LR) | 8 |
| Endeavor Air (200LR) | 43 |
| Estafeta Carga Aerea (100PF) | 2 |
| ExpressJet Airlines (200ER) | 72 |
| ExpressJet Airlines (200LR) | 6 |
| Jazz (200ER) | 11 |
| Jazz (200LR) | 14 |
| MCS Aero Carga (100PF) | 1 |
| Mesa Airlines (200LR) | 1 |
| PSA Airlines (200LR) | 35 |
| R1 Airlines (200ER) | 1 |
| SkyWest Airlines (100ER) | 10 |

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| SkyWest Airlines (200ER) | 29 |
| SkyWest Airlines (200LR) | 128 |
| Voyageur Airways (200ER) | 2 |
| Voyageur Airways (200LR) | 6 |
| BOMBARDIER CRJ700 | 317 (6) |
| Africa | 4 |
| SA Express | 4 |
| Asia, Australasia & Middle East | 13 (6) |
| Air India Regional | 2 |
| Air India Regional (LR) | 1 |
| Felix Airways (ER) | 1 (6) |
| Ibex Airlines (ER) | 7 |
| Shandong Airlines (ER) | 2 |
| Europe | 14 |
| Adria Airways (ER) | 1 |
| HOP! | 13 |
| North/South America | 286 |
| Conviasa (ER) | 2 |
| Envoy (ER) | 43 |
| ExpressJet Airlines | 8 |
| ExpressJet Airlines (ER) | 35 |
| GoJet Airlines (ER) | 22 |
| GoJet Airlines (LR) | 25 |
| Jazz (LR) | 16 |
| LAC – Linea Aerea Cuencana (ER) | 1 |
| Mesa Airlines (ER) | 20 |
| PSA Airlines (ER) | 18 |
| SkyWest Airlines | 12 |
| SkyWest Airlines (ER) | 84 |
| BOMBARDIER CRJ900 | 339 (40) |
| Africa | 10 |
| Arik Air (ER) | 4 |
| Libyan Airlines (LR) | 1 |
| Petroleum Air Services (ER) | 1 |
| Petroleum Air Services (LR) | 1 |
| RwandAir (ER) | 2 |
| Tunisair Express (ER) | 1 |
| Asia, Australasia & Middle East | 24 (10) |
| China Express Airlines (LR) | 18 (10) |
| Iraqi Airways (ER) | 6 |
| Europe | 69 |
| Adria Airways (ER) | 2 |
| Adria Airways (LR) | 4 |
| Air Nostrum (ER) | 11 |
| Binter Canarias (ER) | 2 |
| Estonian Air (ER) | 3 |
| Germanwings (LR) | 17 |
| Lufthansa CityLine (LR) | 18 |
| SAS (LR) | 12 |
| North/South America | 236 (30) |
| Endeavor Air (ER) | 41 |
| Endeavor Air (LR) | 40 |
| ExpressJet Airlines (ER) | 28 |
| GoJet Airlines (LR) | 3 |
| Mesa Airlines (ER) | 51 |
| Mesa Airlines (LR) | 7 (6) |
| PSA Airlines (LR) | 30 (24) |
| SkyWest Airlines (ER) | 36 |
| BOMBARDIER CRJ1000 | 40 (30) |
| Africa | 1 (2) |
| Arik Air (ER) | 1 (2) |
| Asia, Australasia & Middle East | 15 (3) |
| Garuda Indonesia (ER) | 15 (3) |
| Europe | 24 (25) |
| Air Nostrum (ER) | 10 (25) |
| HOP! (EL) | 14 |
| BOMBARDIER CSERIES | (154) |
| Asia, Australasia & Middle East | (41) |
| Gulf Air (CS100) | (10) |
| Iraqi Airways (CS300) | (5) |
| Korean Air (CS300) | (10) |
| SaudiGulf Airlines (CS300) | (16) |
| Europe | (73) |
| airBaltic (CS300) | (13) |
| Malmo Aviation (CS100) | (5) |
| Malmo Aviation (CS300) | (5) |
| Odyssey Airlines (CS100) | (10) |
| Swiss (CS100) | (20) |
| Swiss (CS300) | (10) |
| UTair Ukraine (CS300) | (5) |

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| VIM Airlines (CS300) | (5) |
| North/South America | (40) |
| Republic Airways Holdings Inc (CS300) | (40) |
| BOMBARDIER DASH 8 Q100 | 186 |
| Africa | 21 |
| 748 Air Services | 3 |
| AirKenya Aviation | 1 |
| ALS Limited | 6 |
| Blue Bird Aviation | 3 |
| CemAir | 1 |
| DAC Aviation East Africa | 4 |
| Fly540 | 1 |
| RwandAir | 1 |
| SafariLink | 1 |
| Asia, Australasia & Middle East | 37 |
| Air Marshall Islands | 1 |
| Airlines PNG | 14 |
| Amakusa Airlines | 1 |
| Asia Pacific Airline | 3 |
| Blue Bird Aviation | 3 |
| Maroomba Airlines | 3 |
| RAC – Ryukyu Air Commuter | 4 |
| Skippers Aviation | 4 |
| Skytrans | 3 |
| Solomon Airlines | 1 |
| Europe | 25 |
| Medavia | 1 |
| Olympic Air | 4 |
| Wideroe | 20 |
| North/South America | 103 |
| Air Creebec | 12 |
| Air Inuit | 2 |
| Canadian North | 4 |
| Hawkair | 3 |
| Jazz | 34 |
| North Cariboo Air | 1 |
| Perimeter | 2 |
| Piedmont Airlines | 27 |
| Provincial Airlines | 6 |
| R1 Airlines | 1 |
| Ravn Alaska | 9 |
| Summit Air Charters | 2 |
| BOMBARDIER DASH 8 Q200 | 65 |
| Africa | 7 |
| Blue Bird Aviation | 1 |
| DAC Aviation East Africa | 1 |
| Tassili Airlines | 4 |
| Trans Nation Airways | 1 |
| Asia, Australasia & Middle East | 13 |
| Abu Dhabi Aviation | 2 |
| Blue Bird Aviation | 1 |
| Eastern Australia Airlines | 3 |
| Link PNG | 3 |
| Maldivian | 2 |
| Oriental Air Bridge | 2 |
| Europe | 15 |
| Air Greenland | 6 |
| Air Iceland | 2 |
| Aurora | 2 |
| SATA Air Acores | 2 |
| Wideroe | 3 |
| North/South America | 30 |
| Berry Aviation | 2 |
| CommutAir | 16 |
| LAN Colombia | 6 |
| LC Peru | 6 |
| BOMBARDIER DASH 8 Q300 | 176 |
| Africa | 14 |
| AeroContractors | 1 |
| Air Tanzania | 1 |
| Avmax Chad | 2 |
| DAC Aviation East Africa | 3 |
| Nouvelle Air Affaires Gabon | 1 |
| Petroleum Air Services | 5 |
| Safari Express | 1 |
| Asia, Australasia & Middle East | 63 |
| Abu Dhabi Aviation | 1 |
| Air Nelson | 23 |
| Eastern Australia Airlines | 15 |
| Gryphon Airlines | 1 |

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| Link PNG | 4 |
| Maldivian | 5 |
| PAL Express | 4 |
| RAC – Ryukyu Air Commuter | 1 |
| Regent Airways | 1 |
| Skippers Aviation | 6 |
| Wings Air | 2 |
| Europe | 15 |
| Aurora | 3 |
| InterSky | 3 |
| Medavia | 1 |
| Wideroe | 7 |
| Yakutia Airlines | 1 |
| North/South America | 84 |
| Air Creebec | 1 |
| Air Inuit | 10 |
| Bahamasair | 5 |
| Central Mountain Air | 2 |
| CommutAir | 5 |
| Hawkair | 1 |
| Jazz | 28 |
| LIAT | 4 |
| North Cariboo Air | 5 |
| Perimeter | 2 |
| Piedmont Airlines | 11 |
| Provincial Airlines | 3 |
| R1 Airlines | 2 |
| Voyageur Airways | 4 |
| Wasaya Airways | 1 |
| BOMBARDIER DASH 8 Q400 | 454 (39) |
| Africa | 57 (4) |
| 748 Air Services | 1 |
| AeroContractors | 2 |
| Air Côte d'Ivoire | 2 (2) |
| Arik Air | 4 (2) |
| ASKY Airlines | 4 |
| Blue Bird Aviation | 2 |
| Blue Bird Aviation (PF) | 5 |
| DAC Aviation East Africa | 1 |
| Ethiopian Airlines | 12 |
| Heli Malongo Airways | 2 |
| Jambo Jet | 1 |
| Malawian Airlines | 1 |
| Moçambique Expresso | 3 |
| Rwandair | 2 |
| SA Express | 10 |
| Starbow | 1 |
| Tassili Airlines | 4 |
| Asia, Australasia & Middle East | 98 (3) |
| Abu Dhabi Aviation | 1 (1) |
| Air Niugini | 6 |
| ANA Wings | 21 |
| Biman Bangladesh Airlines | 2 |
| Japan Air Commuter | 11 |
| Nok Air | 4 (2) |
| PAL Express | 5 |
| SpiceJet | 14 |
| Sunstate Airlines | 31 |
| US-Bangla Airlines | 3 |
| Europe | 144 (3) |
| airBaltic | 12 |
| ALROSA Air Company | 1 |
| Austrian | 14 |
| Brussels Airlines | 1 |
| Croatia Airlines | 6 |
| Flybe | 46 |
| LGW | 17 |
| LOT Polish Airlines | 9 |
| Luxair | 7 (3) |
| Olympic Air | 10 |
| SATA Air Acores | 4 |
| Swiss | 4 |
| Wideroe | 11 |
| Yakutia Airlines | 2 |
| North/South America | 155 (29) |
| Horizon Air | 52 (2) |
| Jazz | 20 (13) |
| North Cariboo Air | 2 |
| Porter Airlines | 26 |
| Republic Airlines | 28 |

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|--|----------------|
| Sky Regional Airlines | 5 |
| WestJet Encore | 22 (14) |
| COMAC ARJ21 | (97) |
| Asia, Australasia & Middle East | (97) |
| Chengdu Airlines | (30) |
| Henan Airlines | (50) |
| Myanmar Airways International | (2) |
| Shandong Airlines | (10) |
| Shanghai Airlines | (5) |
| COMAC C919 | 55 |
| Asia, Australasia & Middle East | (55) |
| Air China | (5) |
| China Eastern Airlines | (5) |
| China Southern Airlines | (5) |
| Hainan Airlines | (20) |
| Sichuan Airlines | (20) |
| CONVAIR 580 | 32 |
| Asia, Australasia & Middle East | 10 |
| Air Chathams | 3 |
| Air Freight NZ | 5 |
| Skyforce Aviation | 2 |
| North/South America | 22 |
| Air Tribe | 2 |
| Gulf & Caribbean Cargo | 11 |
| KF Aerospace | 4 |
| Nolinor Aviation | 5 |
| CONVAIR 640 | 5 |
| North/South America | 5 |
| Aeronaves TSM | 5 |
| DE HAVILLAND CANADA DASH 7 | 26 |
| Africa | 4 |
| Airkenya Aviation | 2 |
| Petroleum Air Services | 2 |
| Asia, Australasia & Middle East | 5 |
| Berjaya Air | 3 |
| Pelita Air Service | 2 |
| Europe | 1 |
| Air Greenland | 1 |
| North/South America | 16 |
| Air Tindi | 4 |
| LTA – Linea Turistica Aereotuy CA | 1 |
| Tli Cho Air | 1 |
| Trans Capital Air | 6 |
| Voyageur Airways | 4 |
| DE HAVILLAND CANADA TWIN OTTER | 23 (19) |
| Africa | 3 (1) |
| Air Seychelles (400 Viking) | 3 (1) |
| Asia, Australasia & Middle East | 13 (12) |
| Air Loyauté (400 Viking) | (2) |
| Air Moorea (400 Viking) | (2) |
| AIRFAST Indonesia (400 Viking) | 3 (1) |
| MASWings (400 Viking) | 6 |

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|--|--------------|
| Meiya Air (400 Viking) | (5) |
| Regent Airways (400 Viking) | 1 |
| Trans Maldivian Airways (400 Viking) | 3 (2) |
| Europe | 7 (6) |
| Aurora (400 Viking) | 2 |
| Chukotavia (400 Viking) | 4 |
| SeaBird Airlines (400 Viking) | (6) |
| Zimex Aviation (400 Viking) | 1 |
| DORNIER 228 | 54 |
| Africa | 13 |
| Africas Connection | 2 |
| Air Traffic Nairobi | 6 |
| DANA | 1 |
| Equaflight Service | 2 |
| JetFly | 1 |
| Swala Aviation | 1 |
| Asia, Australasia & Middle East | 20 |
| Air Marshall Islands | 1 |
| Daily Air | 2 |
| Island Aviation | 3 |
| Lao Skyway | 2 |
| New Central Air Service | 3 |
| Northeast Shuttle | 2 |
| Simrik Airlines | 2 |
| Sita Air | 1 |
| Susi Air | 1 |
| Tara Air | 2 |
| Vision Air International | 1 |
| Europe | 5 |
| Aero VIP | 1 |
| Arcus Air | 2 |
| Aurigny Air Services | 1 |
| Lufttransport | 1 |
| North/South America | 16 |
| Aero Cuahonte | 4 |
| Aerocardal | 2 |
| Nomad Air | 1 |
| Summit Air Charters | 5 |
| Vision Airlines | 4 |
| DORNIER 328 | 38 |
| Africa | 3 |
| DANA | 3 |
| Asia, Australasia & Middle East | 8 |
| Express Air | 6 |
| Seair International | 2 |
| Europe | 17 |
| Loganair | 5 |
| Medavia | 1 |
| Rhein-Neckar Air | 1 |
| SkyWork Airlines | 5 |
| Sun-Air of Scandinavia | 4 |
| Welcome Air | 1 |

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|--|------------------|
| North/South America | 10 |
| ADA – Aerolínea de Antioquia | 3 |
| Berry Aviation | 3 |
| Central Mountain Air | 3 |
| Flair Airlines | 1 |
| DORNIER 328JET | 14 |
| Asia, Australasia & Middle East | 1 |
| Express Air | 1 |
| Europe | 10 |
| Sun-Air of Scandinavia | 10 |
| North/South America | 3 |
| Calm Air | 1 |
| Key Lime Air | 2 |
| EMBRAER 170 | 177 (5) |
| Africa | 14 |
| Air Burkina (ST) | 2 |
| Egyptair Express (LR) | 12 |
| Asia, Australasia & Middle East | 39 (5) |
| Air Costa (LR) | 2 |
| Aimorth (AR) | 1 |
| Aimorth (LR) | 3 |
| Fuji Dream Airlines (SE) | 2 |
| Fuji Dream Airlines (SU) | 1 |
| J-Air (ST) | 15 (5) |
| Saudia (LR) | 15 |
| Europe | 37 |
| Austrian (ST) | 1 |
| Azerbaijan Airlines (LR) | 1 |
| BA CityFlyer (ST) | 6 |
| Estonian Air (ST) | 3 |
| HOP! (LR) | 6 |
| HOP! (ST) | 10 |
| LOT Polish Airlines (LR) | 6 |
| LOT Polish Airlines (ST) | 1 |
| Nordic Regional Airlines (ST) | 2 |
| People's Vienna Line (ST) | 1 |
| North/South America | 87 |
| Aeromexico Connect (LR) | 5 |
| Aeromexico Connect (SU) | 3 |
| Compass Airlines (LR) | 6 |
| Republic Airlines (SE) | 1 |
| Republic Airlines (SU) | 21 |
| SATENA (LR) | 1 |
| Shuttle America (SE) | 38 |
| Shuttle America (SU) | 12 |
| EMBRAER 175 | 285 (165) |
| Asia, Australasia & Middle East | 13 (2) |
| Fuji Dream Airlines (ST) | 6 (2) |
| Oman Air (LR) | 4 |
| Royal Jordanian (LR) | 3 |
| Europe | 40 (19) |
| Alitalia Cityliner (ST) | 15 |



Viking's revival of the Twin Otter turboprop will boost the number in operation

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|--|------------------|
| Belavia (LR) | 2 |
| Flybe (ST) | 11 (4) |
| KLM cityhopper (LR) | (15) |
| LOT Polish Airlines (LR) | 12 |
| North/South America | 232 (144) |
| Aeromexico Connect (LR) | 3 |
| Compass Airlines (LR) | 44 (12) |
| Envoy (LR) | (40) |
| Flair Airlines (LR) | 1 |
| Mesa Airlines (LR) | 30 |
| Republic Airlines (LR) | 85 (5) |
| Shuttle America (LR) | 16 (55) |
| Sky Regional Airlines (LR) | 15 |
| SkyWest Airlines (LR) | 38 (17) |
| United Airlines (LR) | (15) |
| EMBRAER 175 E2 | (100) |
| North/South America | (100) |
| SkyWest Airlines | (100) |
| EMBRAER 190 | 506 (47) |
| Africa | 21 |
| Kenya Airways (AR) | 15 |
| Linhas Aéreas de Moçambique (AR) | 2 |
| Royal Air Maroc (AR) | 4 |
| Asia, Australasia & Middle East | 116 (19) |
| Air Astana (LR) | 9 |
| Air Costa (ST) | 2 |
| Arkia (LR) | 1 |
| China Southern Airlines (LR) | 20 |
| Colorful Guizhou Airlines (LR) | (7) |
| GX Airlines (LR) | 5 |
| Hebei Airlines (LR) | 5 (2) |
| J-Air (ST) | (10) |
| Mandarin Airlines (AR) | 8 |
| Myanmar National Airlines (AR) | 2 |
| National Jet Express (LR) | 1 |
| Tianjin Airlines (LR) | 45 |
| Virgin Australia (AR) | 18 |
| Europe | 109 (4) |
| Air Moldova (LR) | 2 |
| Alitalia Cityliner (ST) | 5 |
| Anadolu Jet (LR) | 3 |
| Azerbaijan Airlines (AR) | 4 (2) |
| BA CityFlyer (SR) | 11 |
| BoraJet (LR) | 5 |
| Bulgaria Air (AR) | 1 |
| Bulgaria Air (ST) | 3 |
| Helvetic Airways (LR) | 1 |
| HOP! (LR) | 6 |
| HOP! (ST) | 4 |
| Jetairfly (ST) | 3 |
| KLM cityhopper (ST) | 28 (2) |
| Lufthansa CityLine (LR) | 9 |
| Montenegro Airlines (LR) | 1 |
| Nordic Regional Airlines (LR) | 12 |
| Swiss (LR) | 6 |
| Ukraine International Airlines (LR) | 3 |
| Ukraine International Airlines (ST) | 2 |
| North/South America | 260 (24) |
| Aeromexico Connect (AR) | 5 |
| Aeromexico Connect (LR) | 25 |
| Air Canada (AR) | 45 |
| American Airlines (AR) | 19 |
| Austral Lineas Aereas (AR) | 22 |
| Avianca El Salvador (AR) | 12 |
| Azul (AR) | 10 |
| Azul (LR) | 12 |
| Conviasa (AR) | 15 |
| Copa Airlines (AR) | 12 |
| Copa Airlines Colombia (AR) | 3 |
| Copa Airlines Colombia (LR) | 11 |
| JetBlue Airways (AR) | 60 (24) |
| Republic Airlines (AR) | 2 |
| Republic Airlines (LR) | 3 |
| TAME (AR) | 4 |
| EMBRAER 190 E2 | (27) |
| Asia, Australasia & Middle East | (27) |
| Air Costa | (25) |
| Tianjin Airlines | (2) |
| EMBRAER 195 | 134 (25) |
| Asia, Australasia & Middle East | 5 (20) |



Embraer's E-Jet family remains the most popular of the regional aircraft

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|--|---------------|
| Arkia (AR) | 1 |
| Kalstar Aviation (LR) | 2 |
| Royal Jordanian (AR) | 2 |
| Tianjin Airlines (LR) | (20) |
| Europe | 68 |
| Air Dolomiti (LR) | 10 |
| Air Europa (LR) | 11 |
| Aurigny Air Services (ST) | 1 |
| Belavia (LR) | 2 |
| BoraJet (LR) | 2 |
| Flybe (LR) | 7 |
| LOT Polish Airlines (LR) | 6 |
| Lufthansa CityLine (LR) | 24 |
| Montenegro Airlines (LR) | 3 |
| Saravia (AR) | 2 |
| North/South America | 61 (5) |
| Azul (AR) | 61 (5) |
| EMBRAER 195 E2 | (55) |
| Asia, Australasia & Middle East | (25) |
| Air Costa | (25) |
| North/South America | (30) |
| Azul | (30) |
| EMBRAER EMB-110 BANDEIRANTE | 40 |
| Asia, Australasia & Middle East | 8 |
| Air Rarotonga | 2 |
| Payam Air | 5 |
| Southwest Air | 1 |
| North/South America | 32 |
| Abaeté Linhas Aéreas | 3 |
| Aerocaribbean | 4 |
| Aeromas | 1 |
| Cat Island Air | 1 |
| CM Airlines | 3 |
| LeAir Charter Services | 1 |
| MAP Linhas Aereas | 2 |
| Pineapple Air | 1 |
| Royal Air Freight | 5 |
| Transportes Aéreos Guatemaltecos | 4 |
| Wiggins Airways | 7 |
| EMBRAER EMB-120 BRASILIA | 95 |
| Africa | 26 |
| AB Aviation | 1 |
| African Express Airways | 2 |
| Air 26 | 5 |
| Airjet Angola | 3 |
| Allegiance Airways – Gabon | 1 |
| Diexim Expresso | 2 |
| Flightlink | 1 |
| Groupe Transair | 1 |
| Guicango | 1 |
| Kaya Airlines | 1 |
| Mocambique Expresso | 2 |

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| National Regionale Transport | 2 |
| Sahara African Aviation | 4 |
| Asia, Australasia & Middle East | 12 |
| Air South Charter | 1 |
| Aimorth | 5 |
| Skippers Aviation | 6 |
| Europe | 15 |
| BASE | 3 |
| Rusline | 2 |
| Swiftair | 10 |
| North/South America | 42 |
| Aereo Calafia | 1 |
| Albatros Airlines | 3 |
| Amerflight | 8 |
| Berry Aviation | 5 |
| Charter Air Transport | 1 |
| Everts Air Alaska | 2 |
| Great Lakes Airlines | 6 |
| InterCaribbean Airways | 6 |
| SAEREO | 2 |
| SAP | 1 |
| SARPA | 2 |
| Sete Linhas Aereas | 3 |
| Transcarga International Airways | 2 |
| EMBRAER ERJ-135 | 45 |
| Africa | 26 |
| Air 26 (LR) | 2 |
| Air Namibia (ER) | 4 |
| Airlink (ER) | 1 |
| Airlink (LR) | 12 |
| ALS Limited (LR) | 2 |
| Equaflight Service (LR) | 1 |
| Solenta Aviation (LR) | 1 |
| Swaziland Airlink (LR) | 3 |
| Asia, Australasia & Middle East | 3 |
| JetGo Australia (LR) | 3 |
| Europe | 7 |
| BMI Regional (ER) | 4 |
| HOP! (ER) | 1 |
| Pan Européenne Air Service (LR) | 1 |
| Regional (ER) | 1 |
| North/South America | 9 |
| BizCharters Inc (LR) | 2 |
| ExpressJet Airlines (LR) | 7 |
| EMBRAER ERJ-140 | 33 |
| North/South America | 33 |
| Envoy (LR) | 33 |
| EMBRAER ERJ-145 | 542 |
| Africa | 18 |
| Afric Aviation (LR) | 1 |
| Africa World Airlines (LI) | 3 |
| Air 26 (EP) | 1 |

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|--|------------|
| Air Taraba (EU) | 1 |
| Airlink (EP) | 1 |
| Airlink (MP) | 1 |
| ALS Limited (MP) | 1 |
| Diexim Expresso (MP) | 1 |
| Mauritania Airlines International (LR) | 1 |
| Mocambique Expresso (MP) | 2 |
| Punto Azul (MP) | 2 |
| Solenta Aviation (LR) | 3 |
| Asia, Australasia & Middle East | 35 |
| Air Mandalay (EP) | 2 |
| China Eastern Airlines (LI) | 5 |
| NovoAir (EU) | 3 |
| Rotana Jet (MP) | 3 |
| Tianjin Airlines (LI) | 22 |
| Europe | 60 |
| Air Europa (MP) | 1 |
| BMI Regional (EP) | 12 |
| BMI Regional (MP) | 1 |
| Brussels Airlines (EP) | 1 |
| Denim Air (MP) | 1 |
| Dniproavia (EP) | 2 |
| Dniproavia (EU) | 1 |
| Dniproavia (LR) | 3 |
| Eastern Airways (MP) | 2 |
| HOP! (EP) | 10 |
| HOP! (MP) | 7 |
| Komaviatrans (LI) | 4 |
| Luxair (LU) | 6 |
| Pan Européenne Air Service (LR) | 1 |
| PGA – Portugal Airlines (EP) | 8 |
| North/South America | 429 |
| ADI Charter Services (EP) | 1 |
| ADI Charter Services (ER) | 1 |
| Aereo Calafia (EP) | 1 |
| Aeromexico Connect (LR) | 23 |
| Aeromexico Connect (MP) | 1 |
| Envoy (LR) | 95 |
| ExpressJet Airlines (LR) | 114 |
| ExpressJet Airlines (XR) | 92 |
| IBC Airways (EP) | 2 |
| SATENA (LR) | 2 |
| Shuttle America (LR) | 44 |
| TAR Aerolineas (LR) | 3 |
| Tortug Air (MP) | 3 |
| Trans States Airlines (EP) | 5 |
| Trans States Airlines (ER) | 1 |
| Trans States Airlines (LR) | 26 |
| Trans States Airlines (MP) | 3 |
| Trans States Airlines (XR) | 12 |
| FAIRCHILD METRO/MERLIN | 227 |
| Asia, Australasia & Middle East | 30 |

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|--------------------------------------|-----|------------------------------------|---------|-----------------------------------|---------|---|--------|
| Air Chathams | 1 | Air Niugini | 1 | Trast Aero | 1 | Air Tropiques | 2 |
| Air Post | 3 | Alliance Airlines | 7 | Europe | 3 | Airfast Congo | 2 |
| Airnorth | 3 | TransNusa Air Services | 1 | 223rd State Airline Flight Unit | 2 | Airjet Angola | 1 |
| Airwork (NZ) | 1 | Europe | 25 | Sky Prim Air | 1 | Air-Tec Africa ACMI Leasing | 19 |
| Corporate Air | 2 | Austrian | 6 | North/South America | 1 | Blue Sky Aviation | 2 |
| Sharp Airlines | 6 | KLM cityhopper | 19 | Aerocaribbean | 1 | Business Aviation of Congo | 2 |
| Skippers Aviation | 5 | North/South America | 3 | ILYUSHIN IL-62 | 4 | Busy Bee Congo | 2 |
| Toll Priority | 9 | InselAir Aruba | 3 | Asia, Australasia & Middle East | 2 | Cabo Verde Express | 3 |
| Europe | 29 | FOKKER 100 | 136 | Air Koryo | 2 | Comores Aviation | 1 |
| Aeronova | 3 | Africa | 2 | Europe | 2 | Cotair | 2 |
| Benair | 1 | ECair | 1 | 223rd State Airline Flight Unit | 2 | Doren Air Congo | 2 |
| Binair Aero Service | 9 | Kush Air | 1 | ILYUSHIN IL-76 | 100 | Eagle Air | 4 |
| CityLine Hungary | 1 | Asia, Australasia & Middle East | 84 | Africa | 12 | Filair | 1 |
| Epsilon Aviation SA | 2 | Air Niugini | 7 | Alfa Airlines | 1 | Fourty Eight Aviation | 1 |
| Flightline (Spain) | 4 | Alliance Airlines | 15 | Almajara Aviation | 1 | GisAir | 1 |
| North Flying | 3 | Bek Air | 7 | Badr Airlines | 2 | Gomair | 1 |
| Swiftair | 1 | Iran Air | 10 | CEIBA Intercontinental | 1 | Kin Avia | 5 |
| Swiftair Hellas | 3 | Iran Aseman Airlines | 7 | Delta Air Aviation | 1 | Kush Air | 2 |
| Zorex Air Transport | 2 | Iranian Naft Airlines | 3 | El Dinder Aviation | 1 | Mango Mat | 1 |
| North/South America | 168 | Kish Air | 3 | Global Air | 1 | Minair | 1 |
| Aero Davinci Internacional | 1 | Network Aviation | 12 | Green Flag Aviation | 1 | Solenta Aviation | 4 |
| Aeronaes TSM | 27 | Pelita Air Service | 2 | Kush Aviation | 1 | Sophia Airlines | 1 |
| Air Class Líneas Aéreas | 3 | Qeshm Airlines | 4 | Lina Congo | 1 | South Supreme Airlines | 2 |
| Ameriflight | 47 | Transwisata Air | 1 | Victoria Air | 1 | Trans Air Congo | 1 |
| Bearskin Airlines | 16 | Virgin Australia Regional Airlines | 13 | Asia, Australasia & Middle East | 29 | Tropical Air | 1 |
| Bemidji Aviation | 3 | Europe | 35 | Air Almaty | 2 | ZanAir | 1 |
| Berry Aviation | 8 | Austrian | 15 | Air Koryo | 3 | Asia, Australasia & Middle East | 6 |
| Encore Air Cargo | 12 | Avantair | 1 | AlNaser Airlines | 1 | AK Aero | 1 |
| Key Lime Air | 22 | Carpatair | 3 | Al-Rafedain Falcon | 1 | Goma Air | 1 |
| McNeely Charter Service | 5 | Denim Air | 1 | Asia Airways | 1 | Sky Horse Aviation | 1 |
| Perimeter | 20 | Helvetic Airways | 6 | Jordan International Air Cargo | 3 | Sky Pasada | 1 |
| Provincial Airlines | 1 | Montenegro Airlines | 2 | Khatlon Air | 3 | Zhezair | 2 |
| Vigo Jet | 2 | PGA – Portugalia Airlines | 6 | Pouya Air | 3 | Europe | 58 (3) |
| Western Air | 1 | Trade Air | 1 | Syrianair | 3 | Aeroservis | 1 (1) |
| FOKKER 50 | 100 | North/South America | 15 | TAPC Aviatrans | 2 | Air Max | 1 |
| Africa | 17 | Air Panama | 5 | Turkmenistan Airlines | 3 | Air Moldova | 1 |
| Blue Bird Aviation | 1 | Avianca Brazil | 10 | Uzbekistan Airways | 4 | Air Scorpio | 1 |
| Blue Bird Aviation (Sudan) | 1 | FOKKER F27 | 14 | Europe | 59 | Ak Panh | 3 |
| CAA – Compagnie Africaine d'Aviation | 2 | Africa | 3 | AK Eleron | 2 | Arkhangelsk 2nd Aviation Enterprise | 4 |
| Fanjet Express | 1 | Astral Aviation | 1 | ALROSA Air Company | 2 | Aviaexpress Aircompany | 3 |
| Haajara Airline | 1 | Safe Air Company | 1 | Aviacon Zitotrans | 7 | Benair | 2 |
| Kush Air | 1 | XL Trading | 1 | Azal Avia Cargo | 1 | citywing | 4 |
| Mid Airlines | 1 | Asia, Australasia & Middle East | 7 | Europa Air | 3 | Kazan Air Enterprise | 2 |
| Niger Airlines | 2 | Air Maleo | 2 | Maximus Airlines | 1 | Khabarovsk Airlines | 3 (2) |
| Skypemore Aviation | 1 | Air Post | 2 | Royal Flight | 6 | Komiaviatrans | 4 |
| Skyward International Aviation | 3 | Asialink Cargo Airlines | 2 | Ruby Star | 4 | KrasAvia | 4 |
| Sudan Airways | 3 | FitsAir | 1 | Shar ink | 3 | Orenburzhie Air Company | 8 |
| Asia, Australasia & Middle East | 36 | North/South America | 4 | Silk Way Airlines | 7 | Petropavlovsk-Kamchatsky Air Enterprise | 5 |
| Aero Mongolia | 3 | Air Panama | 3 | Sky Prim Air | 5 | Polar Airlines | 3 |
| Alliance Airlines | 5 | TAM – Transporte Aereo Militar | 1 | TransAVIAexport Airlines | 6 | Russian Post Airlines | 2 |
| Asialink Cargo Airlines | 1 | FOKKER F28 | 3 | Volga-Dnepr Airlines | 5 | Silver Air (Czech Republic) | 3 |
| Hunnu Air | 3 | Africa | 2 | Yuzhmashavia | 2 | Sprint Air | 1 |
| Indonesia Air Transport | 2 | Fly-SAX | 1 | ZetAvia | 5 | Uktus Avia Company | 1 |
| Iranian Naft Airlines | 6 | Toumai Air Tchad | 1 | ILYUSHIN IL-96 | 6 (1) | Yamal Airlines | 2 |
| Qeshm Airlines | 1 | Asia, Australasia & Middle East | 1 | Europe | 2 (1) | North/South America | 41 |
| TransNusa Air Services | 4 | Myanmar National Airlines | 1 | Rossiya Special Flight Detachment | 2 (1) | Aereo Ruta Maya | 1 |
| Travel Air (PNG) | 3 | GAf NOMAD | 2 | North/South America | 4 | Aerocaribe | 1 |
| Virgin Australia Regional Airlines | 8 | Asia, Australasia & Middle East | 2 | Cubana | 4 | Aerocaribe de Honduras | 2 |
| Europe | 32 | Air Safaris & Services (NZ) | 2 | ILYUSHIN IL-114 | 7 | AeroDomca | 2 |
| Air Iceland | 5 | HARBIN Y-12 | 12 (13) | Asia, Australasia & Middle East | 7 | Aeroeste | 2 |
| Air Vallee | 1 | Africa | 2 (2) | Uzbekistan Airways | 7 | Aerolineas SOSA | 3 |
| Amapola Flyg | 11 | Congo Airways | (2) | INDONESIAN AEROSPACE 212 | 8 (1) | AeroPacifico | 1 |
| Braathens Regional | 2 | Uganda Air Cargo | 2 | Asia, Australasia & Middle East | 8 (1) | Air Guyane Express | 4 |
| CityJet | 2 | Asia, Australasia & Middle East | 8 (4) | AIRFAST Indonesia | (1) | CM Airlines | 3 |
| Denim Air | 1 | Air Kiribati | 1 | Nusantara Buana Air | 3 | Comeravia | 4 |
| Minoan Air | 1 | Air Vanuatu | 2 | Pelita Air Service | 4 | SAP | 2 |
| Vizion Air | 1 | Nepal Airlines | 1 (3) | Sabang Merauke Raya Air Charter | 1 | SEARCA Colombia | 7 |
| VLM Airlines | 8 | Real Tonga | 2 (1) | IRKUT MC-21 | (92) | Sundance Air (Venezuela) | 2 |
| North/South America | 15 | Ying An Airlines | 2 | Europe | (92) | TAA-Tourism Aereo Amazonas | 2 |
| Air Panama | 4 | Europe | (4) | Aeroflot Russian Airlines | (50) | TAC – Transporte Aereo De Colombia | 2 |
| ATSA – Aero Transporte SA | 1 | FLY | (4) | IrAero | (10) | Tortug Air | 3 |
| Avior Regional | 4 | North/South America | 2 (3) | Red Wings Airlines | (10) | LOCKHEED C-130 | 1 |
| InselAir | 1 | SATENA | 2 (1) | Transaero Airlines | (12) | Asia, Australasia & Middle East | 1 |
| InselAir Aruba | 3 | Vision Airlines | (2) | UTair | (10) | Yemenia | 1 |
| Mayair | 1 | ILYUSHIN IL-18 | 8 | LET L-410 | 178 (3) | LOCKHEED L-100 HERCULES | 23 |
| Rio Amazonas | 1 | Africa | 1 | Africa | 73 | Africa | 10 |
| FOKKER 70 | 38 | Central Air | 1 | Air Excel (Tanzania) | 1 | Air Algeria | 1 |
| Africa | 1 | Asia, Australasia & Middle East | 3 | Air Express Algeria | 4 | Safair | 7 |
| Golden Wings Aviation | 1 | Air Koryo | 1 | Air Libya | 1 | Uganda Air Cargo | 2 |
| Asia, Australasia & Middle East | 9 | FitsAir | 1 | Air Service Comores | 2 | Asia, Australasia & Middle East | 1 |

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| Lynden Air Cargo PNG | 1 |
| North/South America | 12 |
| Lynden Air Cargo | 6 |
| Prescott | 2 |
| Tepper Aviation | 4 |
| LOCKHEED L-188 ELECTRA | 2 |
| North/South America | 2 |
| Buffalo Airways | 2 |
| MCDONNELL-DOUGLAS DC-3 | 9 |
| Africa | 1 |
| Mombasa Air Safari | 1 |
| North/South America | 8 |
| Cargo North | 2 |
| Kenn Borek Air | 6 |
| MCDONNELL-DOUGLAS DC-8 | 4 |
| Africa | 3 |
| Airlift International of Ghana | 1 |
| Trans Air Cargo Services | 2 |
| Europe | 1 |
| Bravo Cargo Air | 1 |
| MCDONNELL-DOUGLAS DC-9-10 | 12 |
| Africa | 1 |
| Fly-SAX | 1 |
| North/South America | 11 |
| Ameristar Charters | 3 |
| C & M Airways | 1 |
| Kalitta Charters II | 2 |
| SkyWay Enterprises | 1 |
| USA Jet Airlines | 4 |
| MCDONNELL-DOUGLAS DC-9-30 | 20 |
| Africa | 5 |
| African Express Airways | 1 |
| Astral Aviation | 1 |
| Ghadames Air Transport | 1 |
| Global Aviation Operations | 1 |
| Trans Air Congo | 1 |
| North/South America | 15 |
| Aeronaves TSM | 6 |
| Everts Air Alaska | 3 |
| Kalitta Charters II | 1 |
| LASER | 1 |
| Uniworld Air Cargo | 1 |
| USA Jet Airlines | 3 |
| MCDONNELL-DOUGLAS DC-9-50 | 1 |
| North/South America | 1 |
| Aerpostal | 1 |
| MCDONNELL-DOUGLAS DC-10 | 56 |
| North/South America | 56 |
| FedEx (10F) | 36 |
| FedEx (30AF) | 6 |
| FedEx (30F) | 8 |
| KF Aerospace (30F) | 2 |
| Solar Cargo (30F) | 1 |
| TAB Airlines (10F) | 1 |
| TAB Airlines (30AF) | 1 |
| TAB Airlines (30F) | 1 |
| MITSUBISHI MRJ | (223) |
| Asia, Australasia & Middle East | (53) |

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| Air Mandalay | (6) |
| ANA - All Nippon Airways | (15) |
| J-Air | (32) |
| North/South America | (170) |
| Eastern Air Lines | (20) |
| SkyWest Airlines | (100) |
| Trans States Holdings | (50) |
| NAMC YS-11 | 3 |
| Africa | 1 |
| Planes For Africa | 1 |
| North/South America | 2 |
| Alcon | 2 |
| SAAB 340 | 228 |
| Asia, Australasia & Middle East | 72 |
| Air Rarotonga | 1 |
| Corporate Air | 4 |
| Easy Fly Express | 1 |
| Hokkaido Air System | 3 |
| Japan Air Commuter | 10 |
| Legacy Air | 1 |
| Pel-Air Aviation | 4 |
| Regional Express | 48 |
| Europe | 67 |
| ABC Air Hungary | 2 |
| Air Unga | 11 |
| AirEst | 5 |
| Braathens Regional | 1 |
| DOT LT | 2 |
| Fleet Air International | 3 |
| Loganair | 15 |
| Nextjet | 10 |
| RAF-AVIA | 2 |
| Skytaxi | 3 |
| Sprint Air | 13 |
| North/South America | 89 |
| Aerolineas SOSA | 1 |
| Aloha Air Cargo | 3 |
| CM Airlines | 2 |
| IBC Airways | 8 |
| Integra Air | 1 |
| LADE | 4 |
| Pacific Coastal Airlines | 5 |
| Penair | 15 |
| Provincial Airlines | 1 |
| Seaborne Airlines | 7 |
| Silver Airways | 26 |
| Sky Bahamas | 4 |
| Sol Lineas Aereas | 3 |
| Transportes Aereos Guatemaltecos | 2 |
| Transwest Air | 4 |
| Western Air | 3 |
| SAAB 2000 | 32 |
| Europe | 32 |
| BA CityFlyer | 2 |
| Braathens Regional | 11 |
| Eastern Airways | 7 |
| Ethiad Regional | 7 |
| Loganair | 4 |

| | |
|---|----------------|
| Malmo Aviation | 1 |
| SHORTS 330 | 13 |
| Asia, Australasia & Middle East | 2 |
| Deraya Air Taxi | 1 |
| Freedom Air (Guam) | 1 |
| North/South America | 11 |
| Air Cargo Carriers | 6 |
| McNeely Charter Service | 1 |
| Mountain Air Cargo | 2 |
| Ravn Alaska | 2 |
| SHORTS 360 | 44 |
| Africa | 2 |
| ITAB - International Trans Air Business | 1 |
| Malu Aviation | 1 |
| Asia, Australasia & Middle East | 5 |
| Deraya Air Taxi | 2 |
| Freedom Air (Guam) | 2 |
| Gryphon Airlines | 1 |
| Europe | 5 |
| Benair | 3 |
| Nightexpress | 2 |
| North/South America | 32 |
| Air Cargo Carriers | 15 |
| Air Flamenco | 2 |
| Comeravia | 1 |
| Pacific Coastal Airlines | 1 |
| SAP | 1 |
| SkyWay Enterprises | 6 |
| TransAir | 6 |
| SUKHOI SUPERJET 100 | 50 (50) |
| Asia, Australasia & Middle East | (18) |
| Bek Air (95LR) | (7) |
| Lao Central Airlines (95B) | (2) |
| Sky Aviation (95B) | (9) |
| Europe | 34 (18) |
| Aeroflot Russian Airlines (95B) | 20 (10) |
| Center-South Airlines (95B) | 2 |
| Donavia (95LR) | (5) |
| Gazpromavia (95LR) | 7 |
| Red Wings Airlines (95B) | 3 |
| Yakutia Airlines (95B) | 2 |
| Yakutia Airlines (95LR) | (3) |
| North/South America | 16 (14) |
| Interjet (95B) | 16 (14) |
| TUPOLEV TU-134 | 16 |
| Africa | 1 |
| Dove Air Services | 1 |
| Asia, Australasia & Middle East | 4 |
| Air Koryo | 1 |
| Kaz Air Trans | 1 |
| Syrianair | 2 |
| Europe | 11 |
| Center-South Airlines | 5 |
| Kosmos Airlines | 1 |
| Turhan Aviacompany | 5 |
| TUPOLEV TU-154 | 20 |
| Asia, Australasia & Middle East | 5 |
| Air Koryo | 2 |

| | |
|---|----------------|
| Air Kyrgyzstan | 1 |
| Kaz Air Trans | 1 |
| Saykhat | 1 |
| Europe | 15 |
| 223rd State Airline Flight Unit | 7 |
| ALROSA Air Company | 3 |
| Belavia | 3 |
| Gazpromavia | 2 |
| TUPOLEV TU-204 | 28 (15) |
| Africa | 2 |
| Cairo Aviation | 1 |
| Sun Air | 1 |
| Asia, Australasia & Middle East | 2 |
| Air Koryo | 2 |
| Europe | 20 (15) |
| Aviastar-TU | 3 |
| Red Wings Airlines | 8 (10) |
| Rossiya Special Flight Detachment | 3 |
| Sea Air | 1 |
| Transaero Airlines | 5 |
| VIM Airlines | (5) |
| North/South America | 4 |
| Cubana | 4 |
| XIAN MA60 | 42 (68) |
| Africa | 7 (10) |
| Air Burundi | (1) |
| Air Congo | 3 |
| Air Zimbabwe | 1 |
| Asmara Airways | (3) |
| Camair Co | 2 |
| Congo Airways | (6) |
| Massawa Airways | 1 |
| Asia, Australasia & Middle East | 33 (54) |
| Air Kyrgyzstan | (3) |
| Cambodia Bayon Airlines | 1 (1) |
| East Horizon Airlines | 1 |
| Felix Airways | (6) |
| Helitours | 2 |
| Joy Air | 7 (31) |
| Lao Airlines | 4 |
| Lao Skyway | 2 |
| Mihin Lanka | (2) |
| Myanmar National Airlines | 1 |
| Nepal Airlines | 1 (1) |
| Okay Airways | 13 |
| Tajik Air | (1) |
| Ying An Airlines | 1 (9) |
| North/South America | 2 (4) |
| CDS Regional Express SA | (4) |
| TAM - Transporte Aereo Militar | 2 |
| YAKOVLEV YAK-40 | 31 |
| Asia, Australasia & Middle East | 11 |
| Bek Air | 2 |
| East Kazakhstan Region Air Enterprise | 2 |
| Syrianair | 4 |
| Zhetysay Aviakompania | 2 |
| Zhezair | 1 |
| Europe | 19 |
| Aerobratsk | 1 |
| Amur Airlines | 3 |
| Avialift-DV | 1 |
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| Khabarovsk Airlines | 3 |
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| Rossiya Special Flight Detachment | 1 |
| Severstal Aircompany | 1 |
| Tulpar Air | 1 |
| Vologda Air Enterprise | 1 |
| North/South America | 1 |
| Aerocaribbean | 1 |
| YAKOVLEV YAK-42 | 34 |
| Africa | 3 |
| Tarco Air | 3 |
| Europe | 31 |
| Gazpromavia | 4 |
| Grozny-Avia | 8 |
| Izhavia Udmurtia | 7 |
| KrasAvia | 5 |
| Saravia | 7 |



There are 42 of the Xian MA60s in service, mainly in Asia and Africa

From yuckspeak to tales of yore, send your offcuts to murdo.morrison@flightglobal.com

When Scotland got its wings

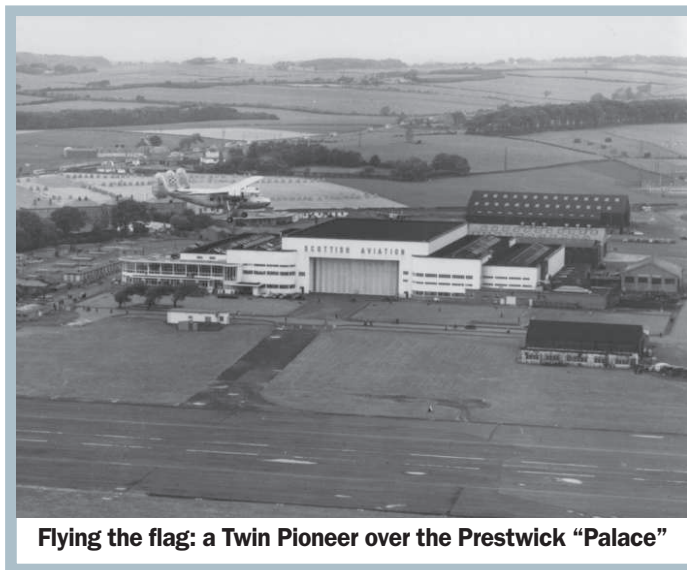
August marks the 80th anniversary of the birth of Scottish Aviation, the Prestwick airport-based business that built the likes of the short take-off and landing Twin Pioneer in the 1950s and Jetstream in more recent decades.

The company's legacy lives on as part of BAE Systems Regional Aircraft, while one of its iconic buildings, the former Palace of Engineering – relocated from the site of Glasgow's 1938 Empire Exhibition to add manufacturing capacity in the early years of the war – exists today as the UK home of Spirit AeroSystems.

Scottish Aviation was set up on 9 August 1935 by David Fowler McIntyre and Douglas Douglas-Hamilton, Marquis of Clydesdale, who had achieved fame as the first men to fly over Mount Everest two years earlier. Determined to establish a multi-faceted aviation industry north of the border, they rapidly began to specialise in training military pilots for the RAF as storm clouds gathered over Europe.

By the time their flight training activities were transferred to Canada and South Africa in 1941, the founders had bought a factory on the Prestwick site and began subcontracting and modification work on Vickers, Blackburn, Hawker and Westland aircraft, as well as converting US types.

After the war came an airline,



Flying the flag: a Twin Pioneer over the Prestwick "Palace"

Scottish Airlines, and the first domestically-designed models, starting with the Prestwick Pioneer. A total of 145 Pioneers and the bigger Twin Pioneer were built. In the 1960s and 1970s, Scottish Aviation carried out aerostructures work for Lockheed on the C-130 Hercules.

Scottish Aviation was subsumed into British Aerospace in 1977 with that era seeing the company produce the likes of the Bulldog ab initio trainer and various versions of the Jetstream.

After BAE Systems stopped building commercial aircraft in the early 2000s, the site continued to support legacy types and, says BAE, has left "a lasting imprint and an aerospace community at Prestwick that flourishes today".

Stubble ahead

South Korean airline Asiana is appealing a decision forcing it to compensate a pilot suspended after he refused to shave his beard. The Yonhap news agency reports that the pilot was grounded for 29 days for not following the company's dress code. He argued a rule allowing foreign colleagues to have full facial hair was discriminatory, and the labour commission agreed, ordering Asiana to stump up for lost earnings.

AGEK needed?

Germania is luring Airbus A320 captains with the promise of a career in a flourishing airline.

"With a fleet of modern machines of the type Airbus A320, Germania will continue to grow and expand its position in the holiday flight market," an advert on a website gushes.

Chris Barnes worries that recruits might be a little confused. The aircraft in the accompanying picture – D-AGEK – is one of its old 737s.

Feather brains

Insider knowledge in evidence? Among the research authors contributing to the US FAA's latest in-depth study on bird strikes are a Dove and a Robbins.

Scout's honour

In the matter of fast single-seater scouting biplanes, we

100 YEARS AGO

were undoubtedly the first to demonstrate the possibilities of

obtaining high speed and good speed variation, coupled with excellent climbing. In Germany, however, designers devoted attention more particularly to the attainment of reliability.

Fighting talk

Twice in four days has the Luftwaffe used some measure

75 YEARS AGO

of its numerical strength in attacks on our shipping and our coasts,

and on each occasion it has lost sixty or more machines in a day. Our losses in fighter machines brought down were 19 and 26, but some of these were only losses of machines, for the pilots survived and will doubtless fight again.

Bored passengers

In disapproving the IATA ban on visual in-flight entertainment,

50 YEARS AGO

the Civil Aeronautics board said that "such a prohibition of what

appears to be a legitimate passenger service is, in our opinion, inconsistent with the public interest.

Gulf effects

US airlines were initially reluctant to raise fares in the

25 YEARS AGO

wake of the Gulf crisis but, by the end of last week, soaring fuel costs

were forcing them to take action. Meanwhile, all airlines which use Middle Eastern airspace are considering the operational alternatives.



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Narrowbody of evidence: not an A320

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Oil price pain for offshore pilots

In February 2015 Bristow Helicopters told its employees in Aberdeen that they did not have to worry because the company had enough money to ride out the oil and gas “crisis” for 18 months to two years, before anyone should even have to think about redundancies.

Just two weeks later the words “possible redundancies” were mentioned.

Now Bristow is looking to cut 66 pilot and 49 engineering posts in Aberdeen, Scatsta, Sumburgh, and the Falkland Islands. The redundant pilots should leave the company in



Bristow: waves of redundancy?

ROUTING

No fight with conflict reporting



Air France judges potential threats for itself

own decisions for selecting routes. For example, Air France and KLM have their own security departments for assessing the potential threats. The result could be different – for example, Air France could allow a certain route while KLM might reject it. The ICAO conflict zone repository is just a source; military intelligence may be different.

In order to provide an equal level of safety this should be regulated by the aviation authorities, not private companies.

This is of public interest, just like EASA regulating the safety in the field of operations (including crew competence) and airworthiness (including maintenance) for all EU operators.

In addition, when a new EU agency regulates conflict zone avoidance, the result will be a level playing field for the cost of operation. If a non-EU airline does not comply, they should not given landing permission. The EU politicians should work this out.

Hermann Dikkers

Ijmuiden, The Netherlands

Analysis of the Malaysia Airlines flight MH17 accident (*Flight International*, 21-27 July), reflects the current practice in Europe.

Whereas the FAA forbids overflying conflict zones for US operators, European airlines make their



KC-46A: overrunning costs

of development costs” on the KC-46A tanker. Surely accounting policies should be standardised across all departments? Why this different treatment?

Is it just that this project can stand such a small amount?

J McDermott

Hereford, UK

Playing politics

With regard to the UK Royal Air Force's new Beechcraft T-6C training planes (*Flight International*, 21-27 July): didn't the service originally want Pilatus PC-7s, but for political reasons had to take Shorts-built versions of the Embraer Tucano?

Now they are to get a plane that started out as the PC-7 and, while every part may be different, still looks like a PC-7 – shades of the Soviet-built Douglas DC-3.

Peter Haller

Wangen, Switzerland

Skewed budgets

In his article (*Flight International*, 28 July-3 August), your correspondent James Drew confirms what Mr Martin says in his response to my letter (*Flight International*, 30 June-6 July).

In his story Mr Drew reveals that Boeing is carrying forward a staggering \$27 billion in development costs [incurred by the 787 programme].

But it appears Boeing has separate accounting practices for different ventures. The article also states Boeing has taken a hit in the second quarter of \$536 million against “overrun



T-6C: APC-7 by any other name?

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15-17 November

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alta.aero/airlineleaders/2015

17-19 November

NBAA 2015
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17-19 November

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The Island of St Helena, an Overseas Territory of the United Kingdom (UK), covers 47 square miles in the South Atlantic Ocean and is over 4,000 miles from the UK, 700 miles southeast of Ascension Island, and 1,700 miles from Cape Town, South Africa.

The Island is currently finalising the build of their new airport with accreditation testing expected for the latter end of this year and the implementation of new commercial scheduled flights from late February 2016.

The St Helena Government (SHG) seeks to engage the services of a qualified "case management" company that can demonstrate that it has access to all technically qualified aircraft providers and medical staff capable of providing medivac from St Helena to appropriate qualified hospitals in Cape Town or Johannesburg in South Africa, but not limited to these cities or countries.

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The "case management" company should have established relationships with Medical centres in South Africa and if appropriate worldwide to ensure seamless medical care.

Registration of initial interest and requests for details regarding specific requirements, should be submitted by email to Noleen Herne, Corporate Procurement Assistant,

noleen.herne@sainthelena.gov.sh and shall be returned to the same email address on or before 21st August 2015, up to 12:00 Hrs (GMT).

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- Hold or have held a part 66 maintenance Inspector license with reasonable experience as engineer of fixed wing or rotorcraft /turbine and jet engines
- Have completed at least two of the following manufacture's recognized type training courses: B747, B777, B787, A340, A330, A320 Family, AW139, S92, EC55, Bell 212, Bell 412 Types of aircraft
- Fluency in written and spoken English is required
- Well-developed communication, interpersonal and presentation skills
- Adopts a principle approach and adheres to the QCAA values and code of conduct
- Challenges important issue constructively
- Acknowledges errors and learns from them, seeking guidance and advice when required
- Willingness and aptitude to work in a flexible working environment including overtime and external travel
- Willingness and aptitude to work in a multi-disciplinary and multi-cultural environment

Job title: Flight Operations Inspector

Qualifications, Experience and Skills

- Fully trained Inspector with 2 years of CAA experience as Inspector in one of EASA member states or fully trained Inspector with 5 years of experience as Inspector in one of the ICAO member states with an ICAO CMA implementation rate above 75%
- Hold or have held an Airline Transport Pilot license with at least 5000 hours as Pilot in Command on a performance Class A (CS25) aircraft
- Experience as Flight Instructor or Flight Examiner is an advantage
- Civil or Military aviation management is an advantage
- Fluency in writing and spoken English is required
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- JAA, FAA or ICAO, ATPL.
- Must be eligible to secure a valid crew visa for operation into Europe and the United States.

Flight experience required:

- Minimum total flying experience of 10,000 hours, of which 5,000 hours are as PIC on a widebody jet aircraft.
- A Type rating on Boeing 747-400 or Boeing 747-8 is REQUIRED.
- A minimum of 3,000 hours as PIC on Boeing 747-400 or Boeing 747-8.
- Have flown Boeing 747-400 or Boeing 747-8 as Captain within the last 12 months.
- Hold a valid unrestricted Class 1 medical.
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We are hiring

Job title: Aircrew Licensing Inspector (Helicopter)

Qualifications, Experience and Skills

- Fully trained Inspector with 2 years of CAA experience as PEL Inspector in one of EASA member states or fully trained PEL Inspector with 5 years of experience as Inspector in one of the ICAO member states with an ICAO CMA implementation rate above 75%
- Hold or have held Air transport pilot license with experience as 4000 hours as a pilot on performance Class A (Cs 29) Helicopter
- Experience as Flight Instructor or Flight Examiner is an advantage
- Civil or Military aviation management is an advantage
- Fluency in writing and spoken English is required
- Well-developed communication, interpersonal and presentation skills
- Willingness and aptitude to work in a multi-disciplinary and multi-cultural environment

Job title: Aircrew Licensing Inspector (Aeroplane)

Qualifications, Experience and Skills

- Fully trained Inspector with 2 years of CAA experience as PEL Inspector in one of EASA member states or fully trained PEL Inspector with 5 years of experience as Inspector in one of the ICAO member states with an ICAO CMA implementation rate above 75%
- Hold or have held Air transport pilot license with experience as 5000 hours as a pilot on performance Class A (Cs 23/25) Aeroplane
- Experience as Flight Instructor or Flight Examiner is an advantage
- Civil or Military aviation management is an advantage
- Fluency in writing and spoken English is required
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We are hiring

Job title: Ground Examiner (Language Proficiency Assessor)

Qualifications, Experience and Skills

- Hold or have held a CPL/ Air traffic controller license or military equivalent and ICAO English language level six (6) rated.
- Be or have been an authorized examiner for ICAO English Language Proficiency Test.
- Have related experience in developing and setting up a system for ICAO English Language Proficiency Testing.
- Have a minimum of 5 years aviation experience
- Be familiar with developments in modern training techniques
- Civil or Military aviation management is an advantage
- Well-developed communication, interpersonal and presentation skills
- Willingness and aptitude to work in a multi-disciplinary and multi-cultural environment

Job title: Documentation Specialist

Qualifications, Experience and Skills

- Academic / Technical degree in any of the following: Law / Aviation Policy and Regulation / Aeronautical Engineering
- Minimum experience of 5 years in development of procedures and processes for aviation technical operations
- Experience in development of national or international aviation legislation or regulations and knowledge of State safety oversight obligations
- Knowledge of aviation-related safety programs and Safety standards applicable to aviation operations
- Clear and concise writing and drafting skills including proficiency with word processing, spread sheet and database software
- Well-developed communication, interpersonal and presentation skills
- Willingness and aptitude to work in a multi-disciplinary and multi-cultural environment

Job title: Data Analyst

Qualifications, Experience and Skills

- Computer proficiency in the use of word processing/desktop publishing spread sheet and graphic presentations.
- Proficient in English language. Any other language including Arabic would be an advantage
- Ability to collect, collate safety data for the establishment of a common database and conduct risk assessment in the determinations of trends and establishment of alert levels.
- At least 5 years of experience as data analyst.
- Well-developed communication, interpersonal and presentation skills
- Willingness and aptitude to work in a multi-disciplinary and multi-cultural environment

Job title: Environment Officer

Qualifications, Experience and Skills

- Minimum of 3 years working in the aviation sector, preferably within a Civil Aviation Authority or Airline.
- Minimum of 5 years dealing with environmental issues.
- Minimum of an under-graduate level qualification in an environmental or sustainable development subject
- Good understanding of aviation regulatory affairs and the working processes of ICAO and Civil Aviation Authorities.
- General understanding of sustainable aviation issues, including sustainable aviation fuels, industry climate change targets, CAEP policy frameworks
- Sound knowledge of related ICAO annexes, recommended practices
- A well-rounded individual with the ability to engage a wide range of senior aviation stakeholders at national, regional and international level.
- Experience in policy development, analytical and project management skills.
- Fluency in written and spoken English is required

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WORK EXPERIENCE CÉLINE HAEFFLINGER

Rising to the rotorcraft challenge

Céline Haefflinger has worked at Airbus Helicopters analysing major incidents, spent a year on secondment to China in the airframe design office, and is currently heading the company's landing gear development effort

How has your experience led to your current post?

My first job related to aviation was part of a training programme at Thales Avionics, in the packaging and conceptions department. The job was about integrating electronic packages within avionics systems, taking into account high thermo-mechanical constraints. I was, along with other engineers, helping Thales on a project for which the customer was Airbus. After that, I started to work for them as a subcontractor on a European research programme.

I remember the team spirit of the department and the motivation and professionalism of the people I was working with. This high level of motivation and solidarity is something I found out to be typical of the aeronautic world.

After that, I joined what was then Eurocopter and was in charge of the technical aspects for major incidents in the design office. I was dealing with fuel systems, landing gears and mission equipment. It was a great time to learn about helicopters. Dealing with major incidents gives you an immediate awareness about safety issues and the consequences of design decisions and non-quality events.

Also I got to know many activities outside the design office because treatment of major incidents involves other stakeholders such as production, customer support, and safety, airworthiness and quality departments.



Haefflinger loves the opportunities for co-operation her position provides

What came next?

I then became a system engineer on landing gear development, integration and support for in-service life. This gave me the opportunity to support in-service issues – a very operational aspect of the job – as well as working on new developments. For example, we were co-developing the H175's landing gear with our Chinese partner and a UK supplier.

I was then detached to China for more than one year to co-ordinate the airframe design office in China. After returning to Marignane, France, I joined the dynamic systems department, and worked for four years with the H160 rotor design team. This experience allowed me to learn about helicopter flight mechanics and design.

What's your role now?

I'm now head of the landing gear development department at Airbus Helicopters. There are two parts to my job: support for in-service life (support to the final assembly line, supporting the customer support team, major incidents) and new developments including the H160, for instance. We have a lot of new developments in front of us over the coming years, which makes the job even more exciting.

What's your favourite aspect?

I have a lot of parts I love in my job. For instance, I love the technical challenges we face, the team spirit of my team, how we try to continuously improve our way of working and knowledge, the involvement in future devel-

opments and how we participate in building the future of helicopters. I also love the management part of the job. I am passionate about what I do, and in the end the most difficult part of my job is to balance that passion and my personal/family life.

What makes it worthwhile?

I am proud when I look up to the sky and see a helicopter flying over, on a mission. The potential for new experiences is vast in this field, not just due to the complexity of the aircraft, but also because there are so many possibilities for co-operation and collaboration with companies from all over the world.

The rotorcraft industry still has many technical challenges to overcome. Although first flights of planes and helicopters occurred nearly at the same time, in the early 20th century, plane development and understanding grew very fast. Development of the modern helicopter really began after the Second World War. Due to the complex dynamic environment, many phenomena still need to be understood, which makes the job very interesting. ■



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